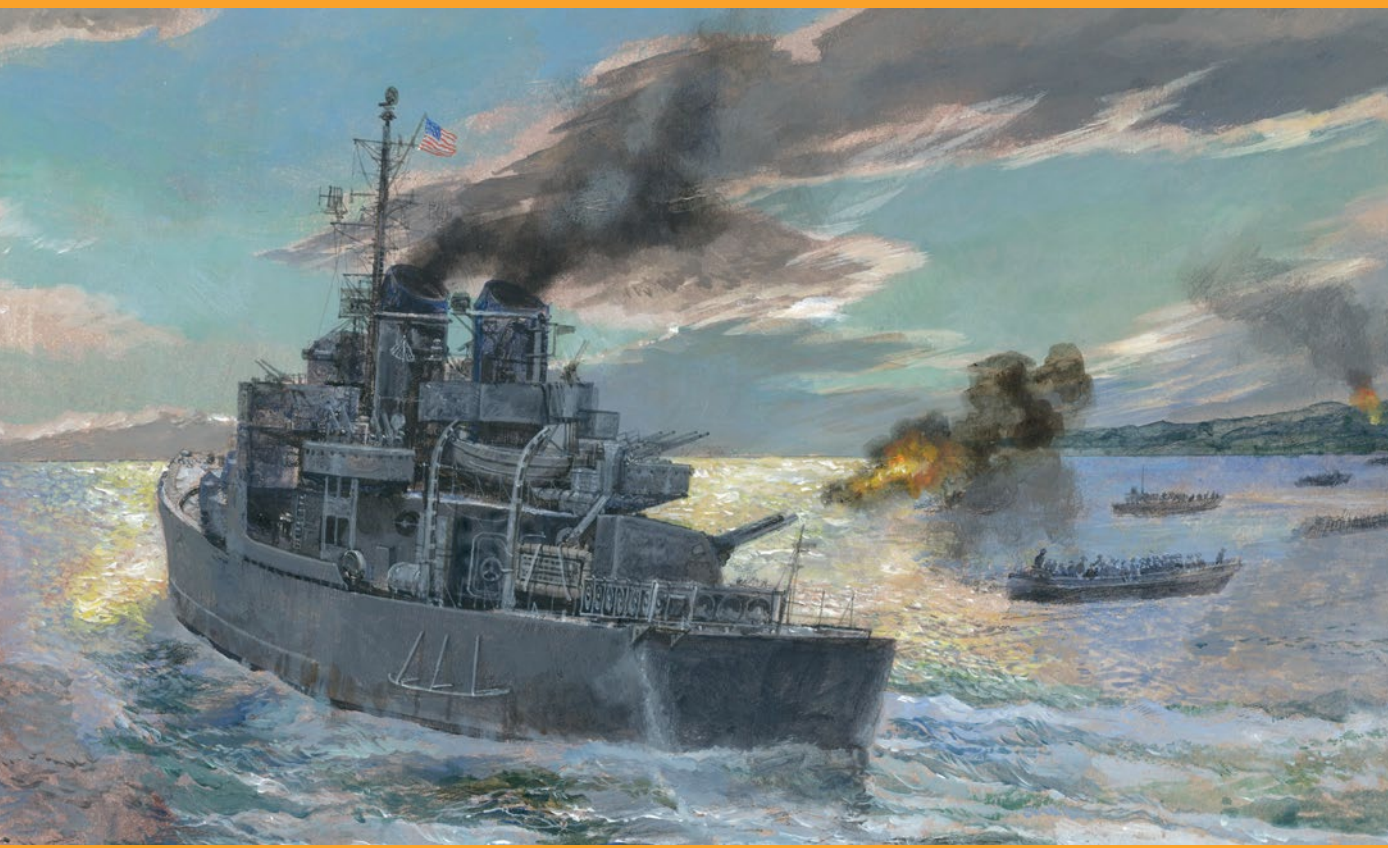
US SEVENTH FLEET, KOREA 1950–53

The first Cold War naval campaign



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Illustrated by **Paul Wright**

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THE FLEET'S PURPOSE

At the end of World War II, the veteran Seventh Fleet faced the challenge of upholding US national security and foreign policy interests in the Western Pacific. The Fleet consisted of five powerful task forces with over 200 ships including three fleet and light carriers and two Alaska-class cruisers. In the months following Japan's surrender, the Fleet was occupied with supporting US interests and implementing Japan's surrender. In particular, the Fleet performed three major missions in 1945. The first was returning Japanese soldiers and civilians from Japanese holdings around East Asia back to Japan and freeing Allied prisoners of war. The second was transporting and supporting US Army occupation forces in southern Korea and US Marine forces in north China. The Army's XXIV Corps was tasked with the occupation of southern Korea, while the Marines of III Amphibious Corps were to accept the surrender of Japanese units in north China and repatriate Japanese personnel until Nationalist Chinese forces could arrive. Finally, the Seventh Fleet provided transport for Chinese Nationalist units from southern China to Manchuria and north China.

The Marine presence in north China and the movement of Nationalist units took place amid the Chinese Civil War, the struggle between Mao Tse-tung's Communists and Chiang Kai-Shek's Nationalists for control of China. On paper, the two sides had joined forces to fight Japan, but Japan's defeat removed this veneer of cooperation and both sides sought to establish control over strategic locations in the fall of 1945. Nationalist forces were concentrated in southern China and sought to extend their authority into the north with the Seventh Fleet's supporting sealift before the Communists reached north China. Doing so would relieve the Marines while also establishing Nationalist control over these territories. The Fleet began regularly operating out of the Chinese ports of Shanghai and Qingdao as tensions between the Communists and Nationalists heated up in the fall of 1945 and early 1946. Through "show-the-

flag" cruises throughout East Asia, the Fleet sought to demonstrate America's presence and interest in the region.

While the Seventh Fleet established its presence in East Asia in 1945 and 1946, the US Navy was being rapidly demobilized. The end of World War II brought strong public demands for the rapid return of US military personnel from overseas. The Navy's Operation *Magic Carpet* transformed a number of warships, including carriers, battleships, and cruisers, into troop transports to bring US personnel home. At the same time, American President Harry Truman's administration sought to reduce government spending, especially military spending, from wartime levels. The Navy's overall strength in active ships fell from 6,700 in August 1945 to 842 by June 1947. Hundreds of ships were placed in reserve for future contingencies and orders for new construction were slashed. The Seventh Fleet's strength declined in line with the larger Navy during this period.

Throughout 1945 and 1946 tensions with the Soviet Union grew over occupation policies in Germany, the political future of Eastern Europe, and the post-World War II settlement. Wartime cooperation between the United States, United Kingdom, and the Soviet Union began to break down amid growing suspicion and mistrust. US military planning focused on the possibility of a war against the Soviets in which the large, veteran Red Army would advance into western and southern Europe. Accordingly, US military planning in the immediate aftermath of World War II prioritized Europe and the Mediterranean over the Pacific.

US policy in the Pacific emphasized the defense of US-held islands (including Japan) and the security of the sea and air routes across the ocean. To implement these policies, in December 1946 President Truman approved the division of the Pacific Ocean between two US military organizations. Far East Command, under Gen. Douglas MacArthur, was responsible for Japan, Korea, the Marianas, and the Philippines. MacArthur retained his position as head of the Allied occupation of Japan. Pacific Command, headed by Adm. John Towers in 1947, oversaw US forces in the remainder of the Pacific. Similarly, Towers retained his position as Commander in Chief, US Pacific Fleet. The bulk of US naval power in the Pacific was under the Pacific Fleet, including the Seventh Fleet, though a small naval force in Japanese waters, Naval Forces, Far East, reported to Far East Command.

While Truman's division of the Pacific established clear boundary lines, the division of roles and responsibilities between the US military services was still being worked out. The 1947 National Security Act unified the Department of War and the Department of the Navy under a single secretary of defense and created a separate Department of the Air Force. The newly independent Air Force believed that airpower was most effectively employed when

The carrier *Princeton* at anchor at Qingdao, China, November 1948. The Seventh Fleet maintained a presence in China through 1949 centered on Qingdao. (National Museum of Naval Aviation)

under the command of a single air officer. In contrast, the Navy wanted to retain naval aviation as a component of the fleet under naval control. The two services also disagreed about who should have the responsibility to deliver atomic bombs in the event of a war.

The services came to an agreement in March 1948 after talks in Key West, Florida that the Navy would retain its air arm while the Air Force would have primary responsibility for strategic air attacks. However, in April 1949 the secretary of defense cancelled a planned new aircraft carrier, the *United States*, which caused concern in senior Navy circles about the future of naval aviation. Navy representatives in Washington, DC leaked damaging information to the press about the Air Force's new long-range bomber, the B-36. In response, Congressional hearings were held from August to October 1949. The Chief of Naval Operations, Adm. Louis Denfeld, testified in October and challenged the Air Force's reliance on long-range strategic bombing which led to his relief by the secretary of the Navy. The episode became known as the Revolt of the Admirals, though it was merely the public component of a debate that had been occurring within the Pentagon for several years. By 1950, these debates over roles and responsibilities between the services had created tension, especially between some elements of the Navy and Air Force. These tensions would shape how the Seventh Fleet provided close air support in the Korean War.

While these debates were taking place in Washington, events in the Chinese Civil War and on the Korean peninsula set the regional context for the North Korean invasion of South Korea in June 1950. In 1946 and 1947 both the Chinese Nationalists and the Chinese Communists focused their attention on Manchuria. Japanese investment in Manchurian industry combined with the region's plentiful raw materials made the area a valuable prize for either side. Although Nationalist forces made progress in Manchuria and north China, by late 1947 they found themselves overextended. Manchuria was far from the Nationalist centers of strength in southern China and in 1948 Communist forces launched a series of offensives that gave them control of Manchuria. During the winter of 1948–49 Mao's People's Liberation Army (PLA) defeated Nationalist forces in two decisive campaigns in and around Peking (Beijing) and between Peking and Shanghai. By April 1949, the Communists were advancing south across the Yangtze River into the heart of Nationalist territory and Nationalist defeat seemed more and more likely.

The carrier *United States* was planned to be the US Navy's first supercarrier, capable of operating the ever-larger aircraft being designed in the late 1940s to carry nuclear weapons. This drawing shows an artist's design of the ship that was cancelled in April 1949 by Secretary of Defense Louis Johnson, a few days after the ship was laid down. (National Archives and Records Administration (NARA))

In response to growing Communist success, the Seventh Fleet and the remaining Marine forces left China in May 1949. That fall, the Communists extended their control into southern China and the Nationalists fled to Taiwan, though

skirmishes over offshore islands continued for years. On October 1, 1949 Mao established the People's Republic of China (PRC) signaling Nationalist defeat in the Chinese Civil War, though the Nationalists retained Taiwan. Communist victory in this conflict freed up several divisions of veteran Korean troops for use in Kim Il-Sung's plans for South Korea.

While the Chinese Civil War raged, two diverging visions for the future of Korea struggled to gain supremacy on the Korean peninsula. In the north Kim Il-Sung's Communist movement gained strength with Soviet support, while in the south a variety of Korean nationalists competed with one another for supremacy. In July 1948, Syngman Rhee gained sufficient support to win the election as the first President of the newly created Republic of Korea, which was established in August. In September, Kim Il-Sung established the Democratic People's Republic of Korea in the north. Kim Il-Sung and Rhee both sought to unify the peninsula under their control and in September 1949 a North Korean-backed insurgency in South Korea flared up. South Korean security forces, including the Republic of Korea Army, gradually put down this insurgency at a high cost by April 1950.

As South Korean forces gained the upper hand over the insurgency, Kim Il-Sung sought Soviet support for a conventional invasion to unify the peninsula by force, since unification through insurgency appeared unlikely. Eventually, in April 1950, Stalin approved Kim's invasion proposal, contingent on Chinese support that Kim also obtained. Stalin's support stemmed from several factors including the 1949 Communist victory over the Nationalists in China and the signing of an alliance treaty between the Soviet Union and the PRC in early 1950. Furthermore, the withdrawal of American troops from the Korean peninsula in mid-1949, Secretary of State Dean Acheson's declaration in January 1950 that the US defense perimeter did not include Korea, and a desire to counter Western successes in establishing the North Atlantic Treaty Organization (NATO) and in thwarting the Soviet blockade of Berlin also led Stalin to support Kim's request. The Soviets provided armor and artillery while the Chinese released veteran North Korean troops from the PLA for service in Kim's Korean People's Army. The Soviets also prepared the operational plan for the invasion used by the North Korean army. The combination of these factors gave the North Korean army an advantage over the Republic of Korea Army, which in the summer of 1950 was primarily a light infantry force.

Concerns about the threat posed by the newly created People's Republic of China led Seventh Fleet commanders to hold a series of naval exercises with Britain's Far East Fleet in early March 1950. An American task force built around the carrier *Boxer* (CV-21) faced off against a British task force centered on the carrier HMS *Triumph* in the South China Sea. In these exercises the two fleets made practice air attacks on one another before joining together for combined training.

The exercises highlighted the US Navy's naval aviation capabilities as well as the Royal Navy's skill in ship-handling. The British ships adopted US Navy

HMS *Triumph* of the British Far East Fleet sails off Subic Bay in the Philippines on March 8, 1950 after combined Anglo-American naval exercises. *Triumph* and the British ships in these exercises benefited from the experience of operating with the Seventh Fleet when the Korean War broke out. (Naval History and Heritage Command (NHHC))

communication practices and tactical books for the exercises that provided valuable training for the British in American methods. The two task forces also practiced replenishing one another at sea, not knowing that underway replenishment would play such a critical role in the Korean War. The British commander, R. Adm. Sir William Andrewes, would later write that when the British ships once again adopted American signals and maneuvers after the Korean War broke out, "it all seemed so familiar … it was just what we had done so often during the exercises in March."

Having failed to achieve Korean unification through insurgency, Kim Il-Sung launched a campaign on June 25, 1950 to achieve unification through conquest. North Korean forces, organized into two corps of infantry divisions and an armored brigade, drove the Republic of Korea Army back and captured the capital Seoul by the end of the month. The Truman administration viewed the North Korean invasion as a prelude to further Communist aggression that was best deterred through a robust US response. On June 27, the President ordered US air and naval forces into battle to support South Korea and authorized the employment of ground forces a few days later.

At the time of the invasion, the Soviet Union was boycotting the United Nations (UN) Security Council due to that body's refusal to give Nationalist China's seat on the Council to the People's Republic of China. Due to the Soviet boycott, the UN Security Council authorized UN members to militarily contribute to the defense of South Korea and the creation of a military command to control the effort. The largest naval contingent came from the US Navy, organized under Far East Command's Naval Forces, Far East, supported by other navies from UN members, especially the United Kingdom and the British Commonwealth states of Australia, Canada, and New Zealand.

FLEET FIGHTING POWER

THE SHIPS

The ships employed by the US Navy in the Korean War were almost entirely products of World War II, designed with a war against Japan in mind. American ship designs emphasized long-range weapons and endurance and in World War II had demonstrated the ability to accommodate the significant wartime advances in radar, radio, and electronics. Most of the ships that served in Korea were less than ten years old, though many required upgrades after being reactivated for service in Korea.

The Navy's aircraft in Korea illustrated ongoing advances in aviation technology. In Korea, carrier air groups included a mix of pre-World War II designs, such as the Vought F4U Corsair, and designs started during World War II but produced postwar, such as the Douglas AD Skyraider and the jet Grumman F9F Panther. The bulk of Navy aviation in Korea operated from the 17 aircraft carriers that saw service in the Korean War. These carriers provided air support, interdiction, fighter escort, reconnaissance, and defensive patrols in support of operations on land and at sea. These 17 carriers consisted of 11 Essex-class fleet carriers, one Independence-class light fleet carrier, and five Commencement Bay-class escort carriers, though at any given time the Navy's Korean carrier strength ranged from two to six carriers.

Essex-Class Carriers

Essex-class carriers provided the bulk of the US Navy's aerial contribution to the Korean War. The design of the Essex class reflected the limitations imposed by the 1922 Washington Naval Treaty. This Treaty put a maximum on the total tonnage of aircraft carriers in each of the major navies and also limited aircraft carriers to 27,000 tons standard displacement. The 1936 London Naval Treaty reduced the size of carriers to 23,000 tons. These requirements shaped carrier design throughout the 1920s and 1930s as the Navy sought to maximize the

The Essex-class carriers *Valley Forge* (foreground) and *Leyte* in Sasebo, Japan, October or November 1950. The air wings of Essex-class carriers shown on deck provided the bulk of the Navy's aerial contribution to the Korean War. (NARA)

utility of American aircraft carriers within the treaty restrictions and the limited budgets of the period between World War I and World War II, the interwar period. In particular, the *Ranger* (CV-4), Yorktown class, and *Wasp* (CV-7) carriers reflected the naval arms limitation treaties' constraints. These large aircraft carriers, including the Essex class, became known as fleet carriers, in contrast to smaller light carriers and escort carriers.

Design work on the Essex class began in 1939 in the months before World War II in Europe broke out. The design ultimately adopted had its origins in the Navy's interwar carrier doctrine and experience, which highlighted the value of the large carriers *Lexington* (CV-2) and *Saratoga* (CV-3). At the same time, the Essex-class designers were not bound by the naval arms limitation treaties. The resulting hybrid design built upon the Yorktown-class design while expanding the hull, displacement, and flight deck size. American interwar carrier doctrine emphasized the value of large air strikes in which the majority of the carrier's air group was launched in a single wave. The larger the air group, the larger the strike that could be sent out. Thus a key design consideration for the Essex class was the ability to carry a large air group. The resulting hangar area, flight deck area, and displacement were all a third larger than the Yorktown class, which allowed the Essex class to carry an air group of approximately 90 aircraft during World War II.

Twenty-four Essex-class carriers were commissioned between 1942 and 1946 and 13 participated in combat in World War II. The ships proved resilient, as both *Franklin* (CV-13) and *Bunker Hill* (CV-17) suffered serious damage from Japanese air attacks in 1945, which detonated American aircraft fully fueled and armed on these ships. However, neither ship sank and both were repaired and restored.

Throughout the 1940s, the weight and size of carrier aircraft grew steadily. An empty 1941 Grumman F4F Wildcat fighter weighed 4,900lb without fuel or ordnance and was 28ft long. By comparison, when the AD Skyraider attack

aircraft entered service in 1946, an empty Skyraider weighed 11,900lb and was 38ft long. Similarly, an empty Grumman Panther jet fighter in 1949 weighed 10,100lb and was also 38ft long. Folding wings moderated the impact of these larger planes, but the overall growth in aircraft size and weight tended to reduce the size of an air group that could be physically accommodated on a carrier. The Essex class's large hangar and flight deck enabled these ships to continue to carry large air groups during the Korean War despite the growth in aircraft size.

While Essex carriers benefited from large aircraft facilities, personnel space proved to be a challenge in Korea. During the Korean War, the Navy relied on the Essex carriers of the Seventh Fleet to operate for extended periods, flying dozens of sorties a day and sometimes at night as well. Conducting these operations required long working hours for air group personnel and the use of messing and aircraft arming facilities around the clock. The personnel needed to sustain four squadrons of aircraft flying day and night filled Essex carriers to capacity and beyond. One carrier captain estimated that flying day and night required 30 percent more personnel than normal and the Essex class struggled to accommodate the crew complements demanded by Korean operations.

In addition to personnel limitations, the ships' ability to carry aviation fuel proved to be a limitation in the Korean War. The Essex was designed to carry 231,000gals of aviation fuel, though changes in the storage tanks' design to improve survivability and other modifications reduced usable capacity to closer to 190,000gals by the Korean War. When operating propellor-driven aircraft, the Essex was designed to carry sufficient fuel for ten days of flight operations over the course of 16 days steaming at sea. The introduction of jet fighters after World War II brought higher performing aircraft into the Navy, but at a significant cost in fuel consumption. Panther fighters flying off carriers in Korea consumed almost three times the fuel per sortie as propellor aircraft like Corsairs and Skyraiders. The higher fuel consumption of Panthers rapidly drew down Essex-class aviation fuel stocks during Korea. As a result, Essex carriers had to meet up with an oiler to take on aviation fuel every three to four days during flight operations. While refueling, the carrier could not fly sorties in support of land operations. By 1950, the Navy had already begun a program to update Essex-class carriers (called the SCB-27 upgrades) which would increase aviation fuel storage capacity to 300,000gals. However, only three of the 11 Essex carriers that operated in Korea had completed the SCB-27 upgrade, which allowed these ships to launch more jet sorties before replenishing their aviation fuel stocks. In contrast, escort carriers of the Commencement Bay class could operate without refueling for longer periods, since these ships only operated propellor aircraft, Corsairs typically.

Commencement Bay-Class Carriers

Escort carriers were introduced in World War II to get carrier-based airpower into service faster than full-size fleet carriers could be built and to allow the fleet

The crew of the *Badoeng Strait* (CVE-116) clear off ice and snow as Marine F4U Corsairs warm up for launch, November 1950. (NHHC)

carriers to focus their air operations on those tasks that required large air strikes in environments where carriers would be subject to sustained enemy attack. Escort carriers had less defensive armament and internal protection than the fleet carriers. Early in World War II, escort carriers were constructed by converting merchant ship hulls already under construction to speed their entry into service. The Commencement Bay-class was the last class of escort carriers built by the US during World War II and incorporated wartime lessons learned. The starting point for their design was an oiler, though the ships were intended to be carriers from their inception. As a result, the class could operate slightly larger and heavier aircraft than earlier escort carriers. They also carried two catapults, which were useful for launching heavily loaded aircraft in calm weather conditions where the wind over the flight deck was insufficient for flying operations.

In 1943 the Seattle-Tacoma Shipbuilding Corporation began construction of the 19 Commencement Bay ships that were ultimately completed. The five Commencement Bay ships that participated in the Korean War, such as the *Badoeng Strait* (CVE-116) and *Sicily* (CVE-118), entered service between the summer of 1945 and early 1946, too late to see action in World War II. Several were decommissioned or placed in reserve in 1946 and 1947 as part of the US Navy's overall postwar reduction in size, though training and antisubmarine duties brought some back into service before 1950. The other three ships that saw service in Korea, *Rendova* (CVE-114), *Bairoko* (CVE-115), and *Point Cruz* (CVE-119), were specifically recommissioned for the Korean War.

Commencement Bay escort carriers operated Marine fighter–bomber squadrons flying the Corsair during the Korean War. They primarily operated off the west coast of Korea supporting blockade operations, providing close air support for UN ground forces, and supporting intelligence operations conducted from small islands off the west coast of Korea. Their smaller size and flight deck prevented them from operating newer fighters such as the Panther or heavier fighter-bombers such as the AD Skyraider, which could carry a heavier payload and had longer endurance than the Corsair. These escort carriers proved well suited to the range of missions they performed in Korea, but they would have struggled to operate in the face of significant air, surface, or submarine opposition.

Iowa-Class Battleships

The design of the Iowa-class battleships grew out of previous American battleship designs. The common feature of the US Navy's battleships built in

the 1910s and 1920s was a maximum speed of 21kts. The need to keep up with faster aircraft carriers resulted in a maximum speed of 28kts for the North Carolina and South Dakota classes of fast battleships, both designed in the second half of the 1930s. However, by the late 1930s it had become clear that even faster speeds would be necessary for battleships to operate with aircraft carriers. As a result, the Iowa class of four ships was able to make 31kts in operating conditions. The Iowa class was not limited by the constraints of the Washington Naval Treaty and the ships' 48,000 tons standard displacement exceeded the Treaty limit of 35,000 tons. The Iowa class's 16in. guns were an improved version of the 16in. guns on the preceding South Dakota class and were capable of reaching targets almost 25 miles away. The Iowas carried nine of these 16in. guns arranged in three turrets. All four ships (*Iowa*, *New Jersey*, *Missouri*, and *Wisconsin*) were built in government shipyards and entered service during World War II.

The Iowa-class battleship *Missouri* fires on targets in northeast North Korea, October 1950. The Iowa-class's 16in. guns provided heavy firepower against hard targets, such as bridges and bunkers, in the Korean War. (NARA)

During World War II, the Iowa-class was modified to carry additional antiaircraft guns and improved electronics such as radar, as were the bulk of the US Navy's heavy warships. The Iowas were originally designed to carry less than 30 light antiaircraft guns. By the end of the war, they each carried over 120 such weapons including at least 19 quadruple Bofors 40mm mounts. At the end of the war, three ships were placed in reserve and only the *Missouri* (BB-63) was in service in June 1950 when the Korean War began.

The three reserve ships were reactivated and all four ships saw service in Korea as fleet flagships and providers of naval gunfire support. The 16in. Iowa guns proved effective at destroying hardened targets such as concrete or steel bridges or bunkers. Such targets were not susceptible to destroyer gunfire or even cruiser gunfire at times and often required repeated air strikes into heavy enemy air defenses. Ground commanders regularly praised the long reach of the 16in. guns, which had a greater range than other surface gun systems. In 1952 the average range of targets engaged by 16in. guns was 32,500yds or just over 18 miles. The accuracy of battleship gunfire in Korea improved when direct spotting, either from helicopters or aircraft, was available, though gunfire without spotting was common. Although originally designed to carry floatplanes, in Korea the Iowa class used Sikorsky helicopters for spotting and general utility missions.

Baltimore-Class Cruisers

Design work on the Baltimore-class heavy cruisers began in 1939 after treaty restrictions had lapsed. The Baltimore design was based on the design of

The destroyer *Buck*, the battleship *Wisconsin*, and the Baltimore-class cruiser *Saint Paul* sail together in Korean waters, February 22, 1952. (NARA)

the heavy cruiser *Wichita* (CA-45) and the Cleveland-class light cruisers. The *Wichita* was considered overcrowded and so the hull for the Baltimore class was expanded to provide a roomier design. The expanded hull size increased displacement from 10,000 tons (standard displacement) for the *Wichita* to over 13,000 tons for the Baltimores. This larger hull made the Baltimores good candidates for continued service with upgrades during the Cold War and four were converted into missile cruisers, serving into the 1970s.

The Baltimore-class ships were capable of cruising at over 30kts, which made them well suited for service as escorts for carrier task forces during World War II. They carried nine 8in. guns in three turrets, two forward of the superstructure and one aft similar to the Iowa-class design. The original design called for 16 light antiaircraft guns, but wartime modifications increased the light antiaircraft battery to 48 guns. A sub-set of the Baltimore class laid down late in World War II, known as the Oregon City class, consisted of three ships and was a slight modification of the Baltimore design. The Oregon City ships carried two aircraft instead of four and reduced the number of ships' boats to make room for more antiaircraft guns.

Six Baltimore-class heavy cruisers saw combat service during the Korean War, where they were primarily used for naval gunfire support, as carrier escorts, and as task force flagships. These heavy cruisers were particularly active in support of ground forces on the Korean east coast, often the Republic of Korea division deployed nearest the eastern shore. The Baltimores were also used extensively during the evacuation from Hungnam in December 1950 and in the siege of Wonsan. Their 8in. guns proved effective against all but the most hardened targets and the guns themselves proved to be generally reliable, though the *Saint Paul* (CA-73) suffered a turret fire and explosion in April 1952. Heavy cruiser naval gunfire was in high demand and the two to three cruisers on station off Korea would regularly fire over 2,000 rounds of 8in. shells collectively per month. The average range of heavy cruiser 8in. gunfire in 1952 was 22,000yds or 12.5 miles.

Destroyers

The American destroyer force that served in the Korean War consisted of a mix of three different classes of destroyers: the Fletcher class, the Allen M. Sumner class, and the Gearing class. The Navy began design work on the Fletchers in late 1939 unhindered by the restrictions of the Washington Naval Treaty. The Fletchers were large destroyers, which made subsequent modifications and additions easier. As designed, their armament consisted of five 5in. guns each in a single mount, ten light antiaircraft guns, ten torpedo tubes, and 28 depth charges. The 5in. guns were capable of engaging aircraft as well as other surface

ships, although the torpedoes provided the most capable anti-ship weapons. Destroyer torpedoes were primarily intended for use against heavy warships while the depth charges provided an anti-submarine capability. Destroyer designs invariably represented a compromise between antiship, antiaircraft, and antisubmarine capabilities and the Fletchers were designed as general utility destroyers able to perform all three missions.

DESTROYER SPECIFICATIONS

	Design displacement (long tons)	Speed trial (knots)	Main battery	Torpedo tubes (designed)	Complement (officers/ enlisted)	Endurance (distance in miles, speed in knots)
Fletcher	2,700	35.1	5 5in./38 cal. in single mounts	ten 21in.	9/264	4,900/12
Allen M. Sumner	2,890	35.82	6 5in./38 cal. in dual mounts	ten 21in.	11/325	4,620/12
Gearing	3,160	33.82	6 5in./38 cal. in dual mounts	five 21in.	11/325	6,370/12

The Fletchers began to enter service in 1942 and 175 ships were built by 1944, making them the largest class of destroyers built for the US Navy. They saw extensive service throughout the war, especially in the Pacific against the Japanese. The ever-increasing threat of air attack during the war led to steady increases in their light antiaircraft armament. In 1943, 17 light antiaircraft guns were authorized, a combination of 40mm Bofors and 20mm Oerlikon guns. In 1945, a further upgrade increased the number of light antiaircraft guns to 26 at the cost of five torpedo tubes. This 1945 upgrade was only implemented on a portion of the class. These wartime additions of more weapons, ammunition, and gun crews increased the weight by approximately 150 tons.

At the end of World War II most of the Fletchers were placed in reserve, though many were reactivated beginning in 1950 after the Korean War broke out. Reactivated ships received the 1945 antiaircraft upgrade, if they had not had it already. A further modification program that stretched throughout the 1950s replaced one 5in. gun and several Bofors weapons with 3in. antiaircraft guns and improved radar and sonar.

The Allen M. Sumner class of destroyers began as a modification of the Fletcher class that sought to increase firepower and make other improvements without a significant increase in size. The most noticeable difference was the replacement of the Fletcher's five single 5in. guns with six 5in. guns mounted in three mounts each with two guns. The Sumner class was designed during World War II. As a result, these destroyers were designed with a larger light antiaircraft battery of 23 40mm and 20mm weapons. The ships began entering service in January 1944 near the end of World War II. The design of the Sumner class's light antiaircraft battery was comparable to the Fletcher class's light antiaircraft battery with the 1945 upgrade and proved valuable during the battle for Okinawa.

The *Wallace Lind* (DD-703), an Allen N. Sumner-class destroyer, sails through a swell on April 16, 1951, while operating off Korea. Given the wide utility of destroyers and the demands for their capabilities, there were never enough of these ships in the Korean War. (NARA)

As more and more fast carriers from the Essex class and fast battleships from the Iowa class entered service, the average speed of carrier task forces increased. Destroyers escorting such task forces needed to have greater speed than the heavy warships so that the escorts could reposition themselves when the heavy ships turned. The increasing speed of the heavy warships meant that destroyers spent more time operating at higher speeds, which was less fuel efficient. The end result was a reduction in the operating radius of existing destroyers. Concern over this shorter endurance was the driving force behind the Gearing-class design. The Gearings were based on the Sumner class but with a slightly longer hull that allowed them to carry more fuel, thus increasing their range.

The Sumners and Gearings provided the bulk of the US Navy's post-World War II destroyer fleet and saw extensive service in Korea. During the Korean War, they performed a wide array of missions including escorting carrier task forces, escorting cruisers and battleships, providing naval gunfire especially in littoral waters, protecting UN-controlled islands off the North Korean coast, blockading North Korea, and patrolling the Taiwan Strait. The wide range of destroyer missions meant that there were never enough to satisfy everyone. The need for destroyers in Korean waters led the US Navy to transfer several divisions of destroyers from the Atlantic Fleet to the Seventh Fleet as reinforcements in 1952 and 1953. The Seventh Fleet also took steps to make more efficient use of scarce destroyers by moving some destroyer maintenance work from Yokosuka to Sasebo, which reduced transit time to a maintenance base. This shift made more efficient use of destroyers at the cost of reducing the opportunity for destroyer crews to interact with the commanders and staff on the carriers that still went to Yokosuka for maintenance and refit work.

AIRCRAFT

Corsair

The Vought F4U Corsair used in Korea stemmed from a late 1930s design for a fighter intended for service on aircraft carriers. The Corsair's airframe

was larger than existing fighters such as the F4F Wildcat and the F6F Hellcat, though it shared their folding wings. The aircraft's distinctive gull-wing design allowed the Corsair to have shorter landing gear since the wings were closer to the ground while simultaneously supporting a large propellor. A large Pratt & Whitney R-2800 Double Wasp engine provided ample power and the engine's 2,000hp was improved throughout the 1940s. The Corsair was designed with six .50-caliber machine guns, though some models were built with four 20mm cannon.

The Corsair saw extensive action in World War II in US Navy, US Marine Corps, Royal Navy, and Royal New Zealand Air Force service primarily in the Pacific theater. Early models experienced some problems such as overly rigid landing gear, but wartime modifications resolved these issues. The aircraft proved capable as both a fighter and light bomber and production continued after the war.

By the summer of 1950, the standard air group of an Essex-class carrier included two squadrons of F4U-4 Corsairs, one squadron of jet fighters (usually Panthers), and one squadron of AD Skyraider attack planes. Marine fighter squadrons also used Corsairs and would operate off escort carriers and land bases in Korea. In the Korean War, Corsairs typically flew close air support, strike, combat air patrol, or antiaircraft suppression missions. Corsairs typically carried between 1,500 and 3,000lb of ordnance, depending on the mission and range needed. The aircraft had a long loiter time compared with jet fighters, which made the Corsair well suited for close air support.

Corsairs faced heavy antiaircraft fire in Korea, especially near high-value targets such as railroad bridges. Corsairs were outclassed by Chinese, Soviet, and North Korean MiG-15 fighters, although a Marine Corsair shot down a MiG-15 in September 1952. When attacked by MiGs, Corsairs would often form a defensive circle to keep the MiGs at bay.

A Vought F4U Corsair catches an arrester wire on the *Philippine Sea* off Korea, December 1950. The Corsair was used by both the Navy and Marine Corps in Korea in strike, antiaircraft suppression, and naval gunfire-spotting roles. (NARA)

A Skyraider loaded with ordnance takes off from the *Princeton*. The Skyraider's large payload made it a formidable aircraft for strike missions. (National Museum of Naval Aviation)

AD Skyraider

Early in World War II the US Navy's Bureau of Aeronautics began investigating procuring an attack plane that would combine the roles of a dive bomber and a torpedo bomber. During the war, the percentage of fighters in carrier air groups increased, which made carrying a smaller number of more capable attack aircraft valuable. Eventually, the Navy selected Douglas Aircraft's Skyraider, which was designed by legendary aircraft designer Ed Heinemann, who also designed the SBD Dauntless dive bomber and later the A-4 Skyhawk. The Skyraider was designed to carry a large payload of 5,000 to 10,000lb of ordnance and two to four 20mm cannon. This heavy payload was greater than that of a World War II B-17 Flying Fortress. The Skyraider used a powerful engine, the Wright R-3350 Duplex-Cyclone, which also powered the B-29 Superfortress. The first Skyraider delivered to the Navy flew in March 1945 and the aircraft entered operational service in April 1947.

The Skyraider proved to be the workhorse of Navy and Marine Corps strike missions in the Korean War. The combination of a high payload, good handling characteristics, and rugged construction made the Skyraider popular with carrier air groups. By the end of 1952, over 1,000 Skyraiders had been produced. The Skyraider could carry three or four times as much ordnance as the Navy and Marine's F4U Corsair fighter-bomber or the Air Force's F-51 Mustang and only occupied 50 percent more hangar space than a Corsair. Given the limited hangar space available on carriers, efficient use of that space maximized the capability of the air group. One Navy evaluation report concluded that the Skyraider was "the outstandingly efficient aircraft of the Korean Campaign in use by any force."

Panther

Design work on what became the Grumman Panther began at the end of World War II as Grumman investigated jet fighters. Due to a desire for a proven, reliable engine design the Panther was powered by an American-built version of the British Rolls-Royce Nene jet engine. Ironically, a Soviet-variant of this same engine powered the Soviet MiG-15 jet fighter flown by the Chinese, Soviets, and North Koreans in the Korean War. Despite protests from the US military, the British government had agreed to sell the Nene engine to the Soviets in 1944 and again in 1947. The Panther was equipped with four 20mm cannon and could carry between 2,800 and 4,000lb of ordnance, depending on the specific model and the wind over the flight deck at launch. However, when loaded with fuel and launched from an Essex carrier catapult, the amount

of ordnance that could be carried had to be reduced. In early operations off Korea, Panthers typically carried no more than 1,500lb, which meant they were rarely used for strike missions early in the war.

The Panther entered US Navy service in 1949 and by the start of the Korean War most Essex-class carrier air groups included one Panther squadron. Panthers were responsible for the first downing of North Korean aircraft by US Navy planes in early July 1950. The Panther's jet engines provided higher speed than propellor-driven aircraft such as the Skyraider and Corsair. A Panther's top speed was between 550 and 600mph (depending on the payload and model) compared to roughly 450mph for a Corsair. This difference in speed led to staggered departures from carriers. The slower Skyraiders would launch first, followed by the Corsairs, and finally the Panthers would catch up the slower strike aircraft in the air. Due to their jet engines that rapidly consumed aviation fuel, Panthers could only stay airborne for a little over an hour and a half compared to the Skyraider which could stay airborne for ten hours. Given the Panther's lower payload compared to a Corsair or Skyraider and greater fuel consumption, one Navy report concluded that each pound of ordnance delivered by a Panther cost nine times as much fuel as a pound delivered by propellor aircraft. Early in the war, the Panther proved valuable as a reconnaissance platform and for escorting Navy strike aircraft, and on occasion Air Force bombers, on missions.

Two F9F-2 Panthers fly past the *Princeton* in May 1951, dumping fuel before landing. The high consumption of aviation fuel by Panthers at times stretched the fuel capacity of Essex-class carriers. (NHHC)

Later in the war, Essex carriers began carrying two jet fighter squadrons (typically Panthers), which significantly increased the rate at which the carrier would use up aviation fuel. Over the course of the war, the Panther was increasingly used as a light bomber, especially when the F9F-5 version, which could carry a heavier payload, entered service late in 1950. The Panther was not as capable as the MiG-15 or US Air Force F-86 Sabre in air-to-air combat, and one US Navy report described the Panther as "ruggedly dependable but a relatively low performance jet fighter."

Helicopters

In the late 1940s Sikorsky HO3S-1 helicopters began to replace seaplanes as utility aircraft on board US Navy battleships and cruisers. The HO3S-1 was the Navy version of the US Air Force's R-5 helicopter, had a crew of one pilot and could carry three passengers. The aircraft was capable of speeds just over 100mph and could enter a hover up to an altitude of 5,300ft. Helicopter Utility Squadron One (HU-1) was organized in 1948 to administer Navy

helicopters in the Pacific, while HU-2 handled helicopters in the Atlantic. Helicopters were typically deployed in one aircraft or two aircraft detachments on ships.

At the start of the Korean War there were two Navy HO3S-1 helicopters in the theater. Helicopters quickly proved to be valuable for a range of missions, including plane guard duty, downed aircrew search and rescue, naval gunfire spotting, mine sweeping, medical evacuation, and transferring equipment and personnel from ship to ship. Plane guard duty involved flying near an aircraft carrier conducting launch or recovery operations in order to be available to pick up any aircrew whose aircraft went into the ocean during these operations. Helicopters proved extremely valuable in hunting for mines, because of their ability to loiter at low altitude. Due to their widespread utility, the Navy brought in 16 more helicopters in the first six months of the Korean War.

Helicopters found further employment in picking up downed aircrew behind enemy lines. For such missions, air cover from friendly fighters was necessary, since helicopters lacked armor or extensive weaponry. Missions behind enemy lines became more difficult the longer the war went on due to the growing number of antiaircraft weapons in North Korea. Helicopters still proved invaluable as rescue platforms when aircraft went down near UN naval forces. The harbor of Wonsan became a popular ditching site for UN aircrew, due to the constant presence of Navy warships. Eventually, the Navy installed a helicopter deck on an amphibious ship stationed in Wonsan harbor to provide consistent helicopter service. From late 1951 to early 1953, helicopters rescued an average of five to six aircrew each month, which improved morale in carrier air groups.

Helicopters, such as this Sikorsky HO3S-1 from Helicopter Utility Squadron 1 (HU-1) on the *Philippine Sea*, on October 19, 1950, performed a range of valuable missions, including picking up downed aircraft and transferring equipment around the fleet. (NARA)

HOW THE FLEET OPERATED

COMMAND, CONTROL, AND COMMUNICATIONS

The command and control arrangements employed at sea during the Korean War reflected the unique context of the US Navy's Western Pacific command. US Navy forces in the Western Pacific in 1950 were divided between two commands, depending on their mission and location. Naval Forces, Far East (NAVFE) was the naval component of Far East Command, headed by Gen. Douglas MacArthur. MacArthur also served as Supreme Commander for the Allied Powers, the head of the Allied occupation of Japan, and became Commander, United Nations Command, the organization established by the UN to oversee Korean operations. Naval Forces, Far East commanded naval forces based in Japan, the Marianas, and the Philippines and was focused on supporting and administering the naval elements of the occupation of Japan. This mission involved tasks such as removing mines from Japanese waters, overseeing Japan's naval demobilization, and inspecting Japanese shipping. V. Adm. C. Turner Joy served as Commander, Naval Forces, Far East (COMNAVFE) from his headquarters in Tokyo and would command US and UN naval operations in the Korean War. In June 1950 Naval Forces, Far East consisted of a small cruiser-destroyer force and a small amphibious force. Joy's staff was manned to meet the peacetime requirements of an occupation, not the operational requirements of a war, and would be greatly expanded.

The other major US Navy command besides Naval Forces, Far East was the US Pacific Fleet, which was responsible for naval operations in the rest of the Western Pacific, outside of Japan, the Marianas, and the Philippines. Adm. Arthur Radford was Commander in Chief, US Pacific Fleet (CINCPACFLT), whose Pacific Fleet included the Seventh Fleet, under V. Adm. Arthur Struble. The Seventh Fleet controlled the preponderance of US naval power in the

V. Adm. Arthur Struble, seen here in September 1952, was serving as Commander, Seventh Fleet when the Korean War began. Struble commanded the invasion force for the September 1950 landing at Inchon. (NARA)

Western Pacific, the carrier task force built around the single operational carrier in the region, the *Valley Forge* (CV-45). Struble also commanded two squadrons of maritime patrol planes, a few submarines, and an underway replenishment group.

While Seventh Fleet reported to Adm. Radford's Pacific Fleet, in the event of an emergency the Seventh Fleet could be shifted to V. Adm. Joy's Naval Forces, Far East organization. The North Korean invasion certainly qualified as such an emergency and Seventh Fleet's *Valley Forge* task force and submarines were placed under Naval Forces, Far East within days of the invasion. The broad command and control structure established by Adm. Joy to respond to the invasion proved to be durable, though wartime experience led to a few adjustments. Joy's naval forces were divided into three groups: the Seventh Fleet that included the carrier task force; Task Force 90, the amphibious force; and Task Force 96, the units previously tasked with supporting the occupation of Japan including the cruiser-destroyer force. Joy's headquarters was dual-hatted as both COMNAVFE and Commander, Task Force 96. Task Force 96 was in turn divided into a number of smaller task groups that each had specific missions such as escorting convoys between Japan and Korea, providing naval gunfire support and blockading on the Korean east and west coasts, and controlling Japanese merchant ships. British, Commonwealth, and other UN naval forces served primarily with the task group that operated off the Korean west coast.

Task Force System

The US Navy divided its operational forces into task forces, the size of which depended on their mission. For example, during September 1950, Task Force 77 consisted of three Essex-class carriers, two light cruisers, and 14 destroyers. A Task Force would be subdivided into task groups. So Task Group 77.1 consisted of the two light cruisers, while Task Group 77.2 contained the 14 destroyers. The carriers and their air wings were assigned to either Task Group 77.3 or Task Group 77.4, depending on the number of carriers present.

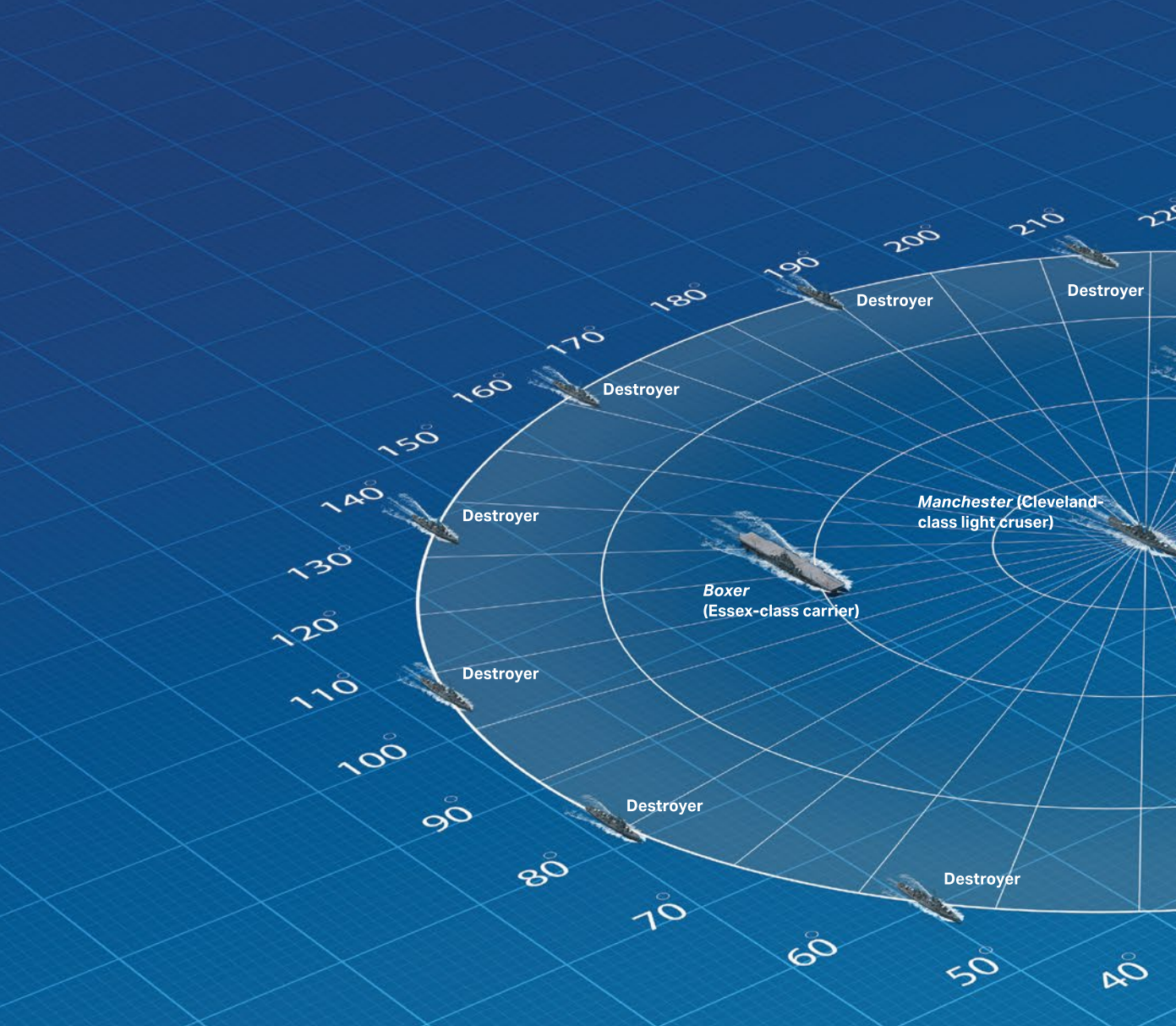
As naval reinforcements arrived in Korean waters the east and west coast task groups within Task Force 96 grew in size. This growth led in mid-September 1950 to the creation of a separate Task Force 95 under Commander, Naval Forces, Far East. This new Task Force 95, named the UN Blockading and Escort

Force, took over command of the east and west coast support groups, the small Republic of Korea Navy, and minesweeping from Task Force 96. This change relieved Adm. Joy's headquarters of the burden of directly administering the growing east and west coast task groups and the Republic of Korea Navy. The creation of Task Force 95 increased the number of major commands focused on the Korean War that reported to Naval Forces, Far East: Seventh Fleet; Task Force 90, the amphibious force; Task Force 96; and now Task Force 95.

The naval command structure was flexible and could be adapted to unique circumstances. For example, a separate Joint Task Force 7 under Naval Forces, Far East was created for the Inchon invasion. Joint Task Force 7 was commanded by V. Adm. Struble, who retained his position as Commander, Seventh Fleet. Joint Task Force 7 included elements from Seventh Fleet, Task Force 90's amphibious ships, units from the coastal support groups, and the US Army's X Corps under Maj. Gen. Edward Almond. This formation brought together all the elements needed for the Inchon invasion: amphibious shipping, naval air and gunfire support, escorts, and the ground forces for the actual landing. Once X Corps was firmly established ashore, Joint Task Force 7 was disbanded on September 21, 1950, six days after the landing.

The division of naval forces into four commands under Naval Forces, Far East made coordination with Army and Air Force commands difficult at times. Carrier-based air operations were conducted by the large fleet carriers in Task Force 77 in the Seventh Fleet as well as the smaller escort and light carriers in Task Force 95, the UN Blockading and Escort Force, which was not in Seventh Fleet. Thus, Air Force or Army commands could be unsure about which formation, Task Force 77 or Task Force 95, to contact and at times would send messages to Naval Forces, Far East for distribution down the naval chain of command. Furthermore, naval operations on the east coast were split between those conducted by Task Force 77 under Seventh Fleet and the east coast support unit under Task Force 95. To address these issues, in April 1951 the Seventh Fleet gained control of Task Force 95 as well as Task Force 92, a new task force created to combine the logistical support ships of Seventh Fleet and Naval Forces, Far East into a single formation. As a result, Seventh Fleet could now coordinate east coast naval operations, since all the relevant formations were under Seventh Fleet. Furthermore, Air Force units such as Fifth Air Force could work directly with Seventh Fleet rather than raising issues to the theater-level commands: Far East Air Force and Naval Forces, Far East.

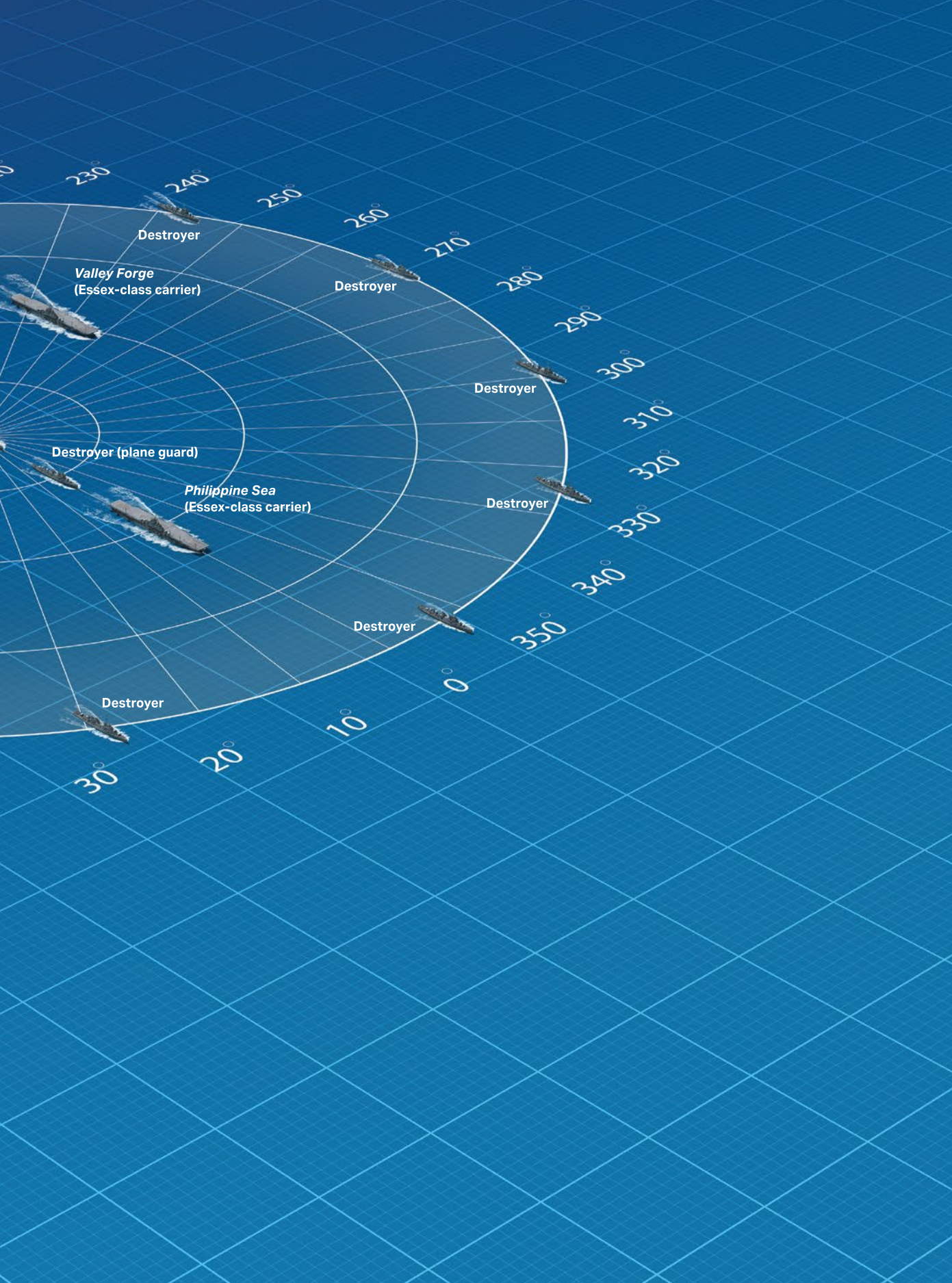
These organizational shifts in command and control reflected Korean War experience, which the US Navy sought to spread among a number of admirals by rotating these officers through the Korean War. Task Force 77, the carrier task force, was commanded by 13 different admirals during the Korean War while Task Force 95, the UN Blockade and Escort Force, was commanded by seven different admirals. This approach provided many rear admirals in the US Navy with combat experience, but the constant turnover made it difficult for



TASK FORCE 77, SEPTEMBER 1950

Task Force 77, the fast carrier task force, is shown as it would have operated during late September 1950 after the landing at Inchon, supporting the 1st Marine Division's drive from Inchon to Seoul. The carriers were stationed 2,000yds from the center of the formation, which was occupied by the single heavy support ship, the light cruiser *Manchester*. If more than one heavy support ship was present, then those ships would be positioned just outside the carriers. The 14 escorting destroyers would be divided between 13 in the screen and one acting as a plane guard. The plane guard destroyer operated near the carrier conducting flight operations to pick up aircrew whose aircraft went into the sea either on launch or recovery. The formation was designed to provide defense against air attacks, but was less effective against submarine threats, though neither air nor subsurface threats materialized during the Korean War. At times, the Task Force would station a destroyer at a distance to serve as a picket to provide early warning.

When replenishing, the task force would line up in one or two lines behind the replenishment ships. The task force ships would take on fuel from the oiler and then move on to replenish from the ammunition and stores ships.


230°
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320°
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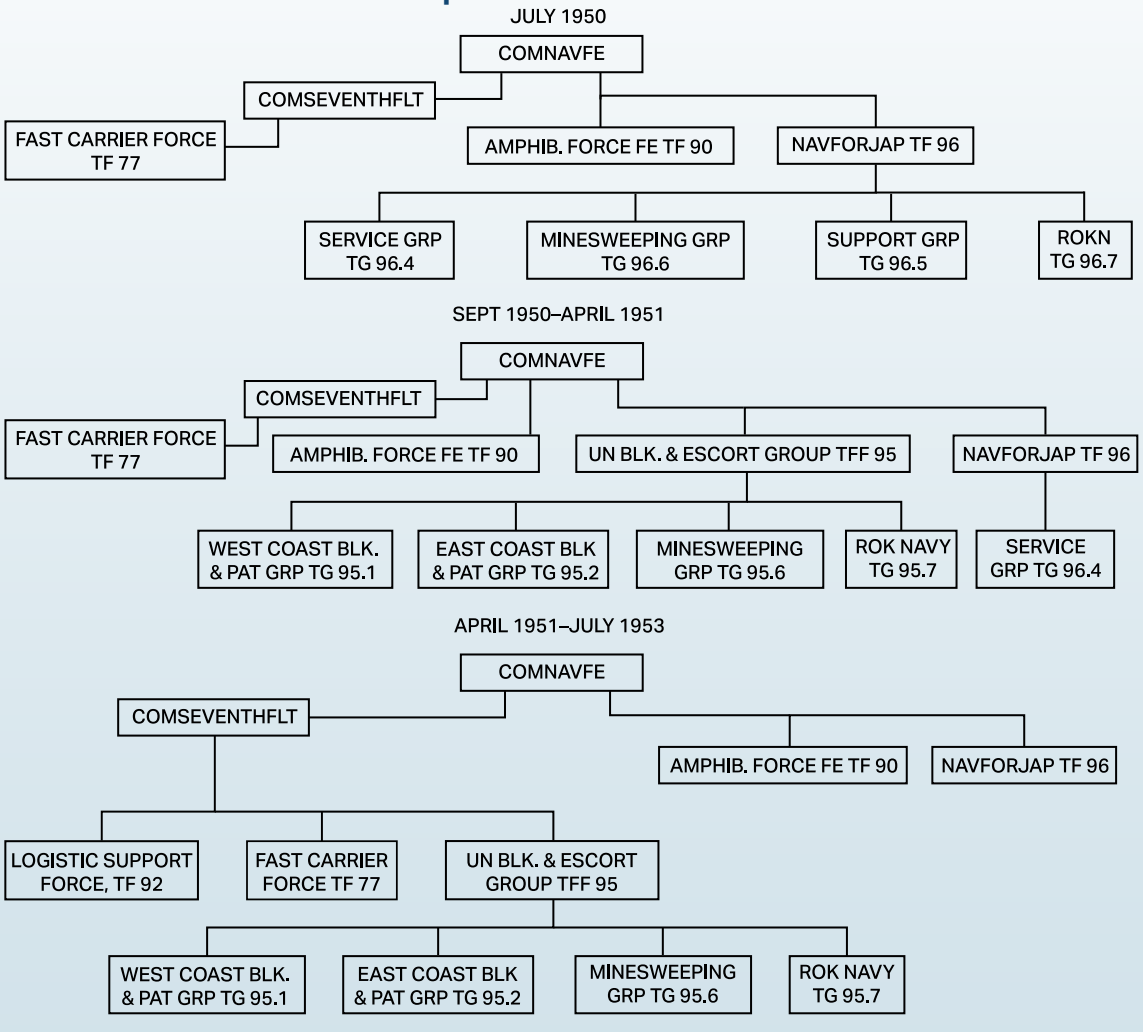
30°
Destroyer
Valley Forge
(Essex-class carrier)
Destroyer
Destroyer
Destroyer (plane guard)
Philippine Sea
(Essex-class carrier)
Destroyer
Destroyer
Destroyer

Command Relationships Chart


JULY 1950
COMNAVFE
COMSEVENTHFLT
FAST CARRIER FORCE TF 77
AMPHIB. FORCE FE TF 90
NAVFORJAP TF 96
SERVICE GRP TG 96.4
MINESWEEPING GRP TG 96.6
SUPPORT GRP TG 96.5
ROKN TG 96.7
SEPT 1950–APRIL 1951
COMNAVFE
COMSEVENTHFLT
FAST CARRIER FORCE TF 77
AMPHIB. FORCE FE TF 90
UN BLK. & ESCORT GROUP TFF 95
NAVFORJAP TF 96
WEST COAST BLK. & PAT GRP TG 95.1
EAST COAST BLK & PAT GRP TG 95.2
MINESWEEPING GRP TG 95.6
ROK NAVY TG 95.7
SERVICE GRP TG 96.4
APRIL 1951–JULY 1953
COMNAVFE
COMSEVENTHFLT
AMPHIB. FORCE FE TF 90
NAVFORJAP TF 96
LOGISTIC SUPPORT FORCE, TF 92
FAST CARRIER FORCE TF 77
UN BLK. & ESCORT GROUP TFF 95
WEST COAST BLK. & PAT GRP TG 95.1
EAST COAST BLK & PAT GRP TG 95.2
MINESWEEPING GRP TG 95.6
ROK NAVY TG 95.7

This diagram shows the naval command structure for the Korean War in July 1950, from September 1950 to April 1951, and from April 1951 to the end of war.

commanders to build relationships with other headquarters. The two three-star naval commands (Naval Forces, Far East and Seventh Fleet) were more stable. Adm. Joy served as Commander, Naval Forces, Far East for the first two years of the war and was replaced by V. Adm. Briscoe for the final year of the conflict. Briscoe had served as Commander, Seventh Fleet prior to taking over from Joy, which gave him previous experience in the Korean War. The Seventh Fleet was commanded by four admirals during the war. Excluding Briscoe (whose tenure with Seventh Fleet was shorter) the wartime commanders of Seventh Fleet held that position for an average of 11.6 months, significantly longer than the average tenure of Task Force 77 commanders, which averaged just under three months.

NAVAL COMMANDERS	
Commander Naval Forces, Far East	
Vice Admiral C. Turner Joy	August 26, 1949–June 4, 1952
Vice Admiral Robert P. Briscoe	June 4, 1952–July 27, 1953
Commander Seventh Fleet	
Vice Admiral Arthur D. Struble	May 6, 1950–March 28, 1951
Vice Admiral Harold M. Martin	March 28, 1951–March 3, 1952
Vice Admiral Robert P. Briscoe	March 3, 1952–May 20, 1952
Vice Admiral Joseph J. Clark	May 20, 1952–July 27, 1953
Commander Task Force 77	
Rear Admiral John M. Hoskins	Two periods between June 25, 1950–November 5, 1950
Rear Admiral Edward C. Ewen	Four periods between August 25, 1950–February 26, 1951
Rear Admiral Ralph A. Ofstie	Four periods between December 25, 1950–May 6, 1951
Rear Admiral William G. Tomlinson	Six periods between April 4, 1951–October 3, 1951
Rear Admiral George R. Henderson	Four periods between May 6, 1951–August 10, 1951
Rear Admiral John Perry	Eight periods between August 22, 1951–June 11, 1952
Rear Admiral Joseph J. Clark	Two periods between June 4, 1953–July 14, 1953
Rear Admiral Frederick W. McMahon	Four periods between December 12, 1951–April 23, 1952
Rear Admiral Apollo Soucek	Eight periods between April 2, 1952–May 15, 1953
Rear Admiral Herbert E. Regan	Three periods between July 6, 1952 –November 1, 1952
Rear Admiral Robert F. Hickey	Six periods between September 21, 1952–April 22, 1953
Rear Admiral William D. Johnson	Four periods between November 25, 1952–July 27, 1953
Rear Admiral Robert E. Blick	Two periods between June 4, 1953–July 14, 1953
Commander Task Force 95 (and predecessors)	
Rear Admiral John M. Higgins	June 25, 1950–July 25, 1950
Rear Admiral Charles C. Hartman	July 25, 1950–September 12, 1950
Rear Admiral Allan E. Smith	September 12, 1950–February 19, 1951
Vice Admiral William G. Andrewes, RN	February 19, 1951–April 3, 1951
Rear Admiral Allan E. Smith	April 3, 1951–June 20, 1951
Rear Admiral George C. Dyer	June 20, 1951–May 31, 1952
Rear Admiral John E. Gingrich	May 31, 1952–February 12, 1953
Rear Admiral Clarence E. Olsen	February 12, 1953–July 27, 1953

Naval Communications

Command and control of naval operations in Korea required effective naval communications. Overall, the US Navy's communications infrastructure in the Western Pacific enabled commanders to conduct wartime operations, though the scale of radio traffic proved an enduring problem throughout the Korean War. The Navy's radio system used a broadcast model in which units sent radio messages to be transmitted to a shore-based communications facility on Guam, which then broadcast the messages to the entire fleet. Radio rooms on ships, shore stations, and aircraft would keep a radio circuit tuned to the Guam broadcast frequency and copy radio traffic sent on that frequency. This system reduced the need for units to transmit radio messages themselves to multiple destinations, thus making their position harder for enemy radio direction finders to determine.

In the initial weeks and months of the Korean War, a combination of factors caused delays in the handling and delivery of radio messages through the

Navy's broadcast system. First, the Navy's shift from peacetime operations to active combat in late June 1950 necessarily resulted in a major increase in radio traffic in the Western Pacific. Traffic ranged from lengthy summaries of intelligence reports and operations to orders to replenishment ships to meet up with the carrier *Valley Forge* to requests from Eighth Army for close air support. Second, Army and Air Force radio messages tended to be longer than comparable Navy messages, due to differences between the services. Ship design inherently involved trade-offs between the space devoted to various functions, such as weapons, sensors, navigation, propulsion, sleeping quarters, and communications. Thus, the space for communications equipment was always limited, which in turn led to a desire for brevity in naval communications. Furthermore, ships could only hold so many sailors, which put an upper limit on the number of communicators that could be carried, another argument for brevity. Due to these structural limitations, Navy radio communications tended to be briefer than comparable Army and Air Force messages. The lengthy Army and Air Force operational reports sent to Navy units early in the Korean War contributed to the overall growth in message traffic.

Navy radio stations in the Western Pacific had sufficient personnel for peacetime levels of radio traffic, but they were overwhelmed by wartime radio traffic. The Naval Communications Facility at Yokosuka, Japan, a key relay station between operational units and Guam, handled just over 15,000 radio messages in July 1950. In October 1950 Yokosuka handled 45,000 messages as the scale of operations in Korea steadily grew. This growth in traffic caused delays in message delivery through the Guam radio broadcast, which in turn prevented messages from reaching their destination for days in some cases. Furthermore, the shift from peacetime to wartime operations increased the classification level of radio traffic. This increase in enciphered radio traffic broadcast to the fleet proved to be more than some units' radio rooms could handle. Sailors experienced in communications and ciphers were best positioned to handle this increase in coded messages, but such sailors were in short supply for much of the Korean War.

The fleet responded to these delays in several ways with varying effectiveness. The communications center on Guam used the priority label (the "precedence") assigned to each radio message to determine the order in which to transmit radio messages. In the summer and fall of 1950, as units in Korean waters experienced delays in their messages being broadcast by Guam, commanders at times assigned a higher priority to their messages than was warranted in order to get their message delivered more rapidly. The resulting growth in higher-priority messages actually caused further delays. As a temporary measure in the early months of the war, communicators on Guam at times screened radio traffic and adjusted its priority before broadcasting the message, a change from accepted practice. While this approach could reduce the number of high-priority messages, the Guam radio room was sufficiently distant from

Korean waters that personnel there were not in the best position to evaluate message priority.

To handle the high volume of radio traffic, ships at times took sailors with no communications experience, such as stewards or commissary workers, and assigned them to the radio room. In time, this approach could improve a ship's ability to handle radio traffic, but these inexperienced sailors needed several months of training and experience to become proficient in radio work. The Navy also activated a number of Naval Reservists, who were sent to communications offices in the Western Pacific to increase their ability to handle radio traffic. Reservists also typically needed additional training and experience before they could handle radio traffic as efficiently as sailors with long service in radio rooms.

These personnel changes provided some improvement in the handling and delivery of Navy radio traffic. By the fall of 1951, the scale of radio traffic remained high, though delays in delivery were typically in lower-priority messages. However, delays continued to occur throughout the war, in part because the volume of radio traffic continued to grow as reinforcements arrived. For example, the Naval Communications Facility at Yokosuka handled over 80,000 radio messages in October 1952, an increase of more than 50 percent compared to October 1950. Continuing delays were also caused by personnel issues. In 1952 and 1953, shortages of experienced radio personnel resulted in less experienced personnel making minor errors when copying or decoding messages. These errors at times required messages to be retransmitted, which added to the volume of traffic.

The participation of Allied ships and aircraft in Korean War naval operations also created communications challenges, though solutions and workarounds were identified and employed. British and Commonwealth ships typically had smaller radio rooms and fewer radio operators than their American counterparts.

BATTLE OF CHUMONCHIN CHAN, JULY 2, 1950 (overleaf)

In the days after the North Korean invasion of South Korea, US and British warships began patrolling and blockading along the Korean coastline. On July 2, the American light cruiser *Juneau* and the British light cruiser *Jamaica* along with the British frigate *Black Swan* were patrolling just south of the 38th parallel off the east coast. *Jamaica* had linked up with *Juneau* on June 30 and *Black Swan* joined on the night of 1/2 July. Early on the morning of the 2nd, a group of four North Korean motor torpedo boats, two gunboats, and ten small craft were spotted heading north after having unloaded ammunition for North Korean ground forces driving south. The torpedo boats and gunboats turned to sea and engaged the Anglo–American force. The *Jamaica*'s captain later wrote that by this move "it was evident that these vessels were bent on work which was hostile to South Korea and that, in accordance with the policy set out in the Operation Orders, they must be thwarted." The cruisers sought to keep the torpedo boats out of torpedo range and opened fire, destroying three out of the four torpedo boats and both gunboats while driving off the remaining torpedo boat. North Korean shore batteries then opened fire on the Anglo–American ships, which withdrew out of their range. The engagement proved to be the only significant surface action of the Korean War and highlighted the superior naval power of the UN forces.

As a result, these ships struggled to keep up with the scale of US Navy radio traffic. Furthermore, British radio operators were accustomed to receiving radio traffic from their shore station on Singapore using a different frequency than that used by the US Navy in the Western Pacific. A direct radio-teletype link was established between Tokyo and Singapore, so that US Navy traffic could be sent to British ships on the Royal Navy's radio network from Singapore. This solution avoided putting additional British radio traffic on the already overloaded Guam fleet broadcast and allowed British ships to continue to use established circuits to receive radio traffic.

Differences in radio equipment between American and Allied ships also required workarounds. In 1946, the US military began to shift voice communications to ultra-high frequency (UHF) radio. The US Navy's transition to UHF was in progress when the Korean War broke out in 1950 and continued throughout the war. The expense of UHF installations combined with Britain's economic challenges meant that British ships in Korea generally did not have UHF capabilities. Furthermore, American ships were equipped with a nighttime infrared signaling device that British ships did not carry. As a result, multinational task forces in the Korean War avoided using UHF radio or the nighttime infrared signaling equipment.

To communicate securely with Allied ships in the Korean War, the US Navy provided them with access to some US Navy codes, while retaining other codes for US-only use. At times, radio messages for Allied ships were sent in a US-only code not held by those ships, making it impossible for them to decode and read the message. Typically, the cause of this error was that the originator of the message did not have an accurate list of which codes were held by Allied ships.

The carrier *Leyte* loading aircraft at Yokosuka, Japan with Mount Fuji in the background, January 24, 1951. (NHHC)

The two workaround solutions were either for the message to be recoded in a common code and resent or for a nearby American ship to decode the message and then pass the message to the Allied ship. However, the first solution added more radio traffic to the Navy's network, while the second taxed the radio rooms of American ships.

For Navy aircraft to effectively operate in Korea, aircrew needed reliable radio communications with carriers, with US and Allied aircraft, and with close air support controllers. Communications between Navy and Air Force aircraft were complicated by differences in equipment. Navy and Air Force radio channels were not standardized, and so only a few channels were available for use by aircraft from both services. These common channels could easily be overloaded with radio calls. The situation was made worse by the tendency of aircrew to send unnecessary radio calls. A Pacific Fleet report in early 1953 concluded that "the average strike group engages in an almost continuous conversation with ship and task force controllers while planes are airborne. Reports from carriers indicate than 80 percent of these transmissions are useless and indefensible from an operational point of view." Efforts to improve aerial communications continued throughout the Korean War.

DOCTRINE

In 1950, the US Navy's doctrine was heavily influenced by World War II, especially the war against Japan in the Pacific. Over the course of that conflict the carrier task force had become the Navy's principal offensive tool. Carrier task forces had demonstrated their ability to successfully strike targets in the midst of significant enemy air and naval defenses. In the context of the Cold War, the most likely enemy the Navy would face was the Soviet Union, which lacked a significant ocean-going navy in the late 1940s. However, the Soviets did have a sizable submarine force and had gained access to advanced German submarine technology at the end of World War II, especially the Type XXI submarine. American naval planners feared that the Soviets would draw upon this German technology to build their own fleet of advanced submarines, the capabilities of which would negate the effectiveness of existing anti-submarine forces. In the event of a war with the Soviet Union, such advanced submarines might interdict the shipping routes in the Atlantic and Pacific.

US Navy admirals, such as Chief of Naval Operations Adm. Forrest Sherman, advocated for using carrier task forces in an offensive role to counter the Soviet submarine threat. The Navy's carriers would strike Soviet shipyards and submarine bases to destroy submarines and their support facilities through an "attack-at-the-source" strategy. Reducing Soviet submarine capabilities at their source would in turn reduce the need to deploy large anti-submarine forces to protect convoys. The post-World War II shortage of escorts made this attack-at-the-source approach attractive. The Navy also planned to use carrier task

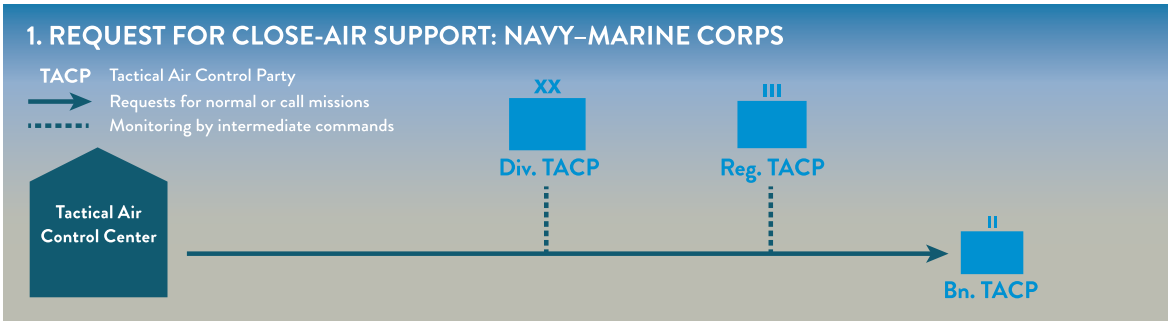
forces to support land operations, especially in Europe. Navy plans called for carrier-based planes operating in the Mediterranean to strike advancing Soviet ground forces and airfields throughout southeastern and southern Europe in the event of a war.

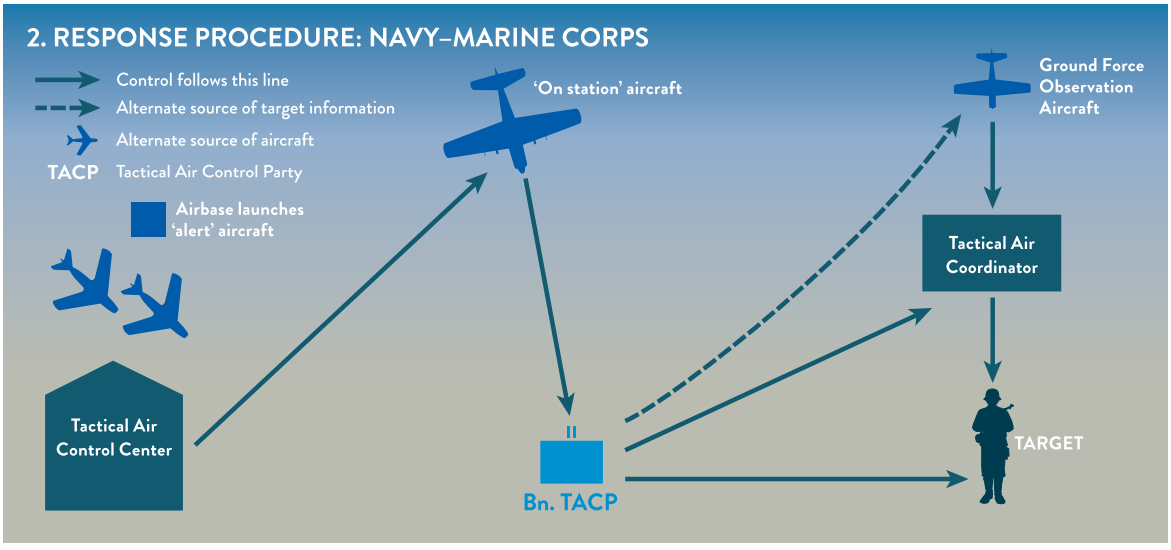
In order for carriers to operate offensively, they needed protection from surface, air, and sub-surface threats, especially at night, since night air capabilities were limited. This protection was provided by escorts and standing air patrols. US Navy doctrine envisioned carrier task forces of up to four carriers protected by approximately six cruisers and 16 destroyers. The cruisers and destroyers would ward off surface threats, guard against submarine attacks, and provide antiaircraft protection. The carrier itself would maintain a standing combat air patrol of several fighters throughout the day to guard against airborne threats as well as a smaller airborne anti-submarine patrol. American naval doctrine relied on larger land-based or amphibian patrol planes to perform long-range reconnaissance and scouting to provide task forces with early warning of threats. The Seventh Fleet's carrier operations in the Korean War reflected Navy doctrine in terms of the composition and operations of carrier task forces. Task Force 77,

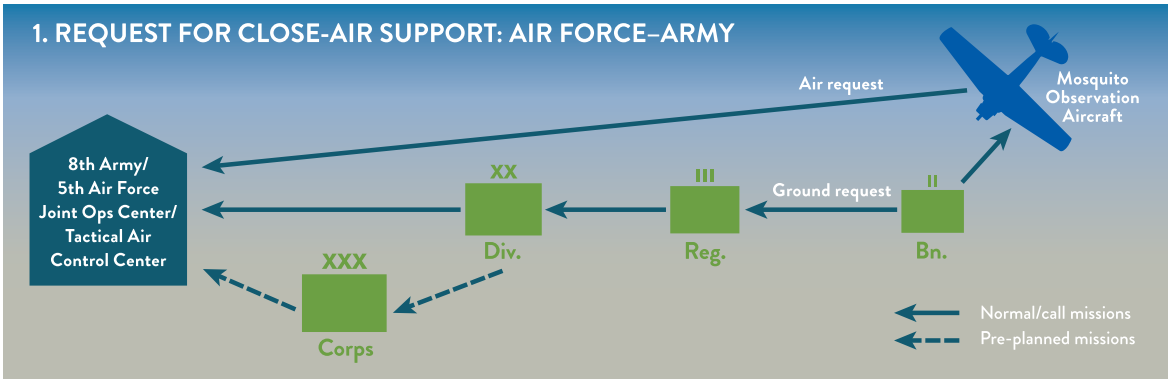
Close Air Support

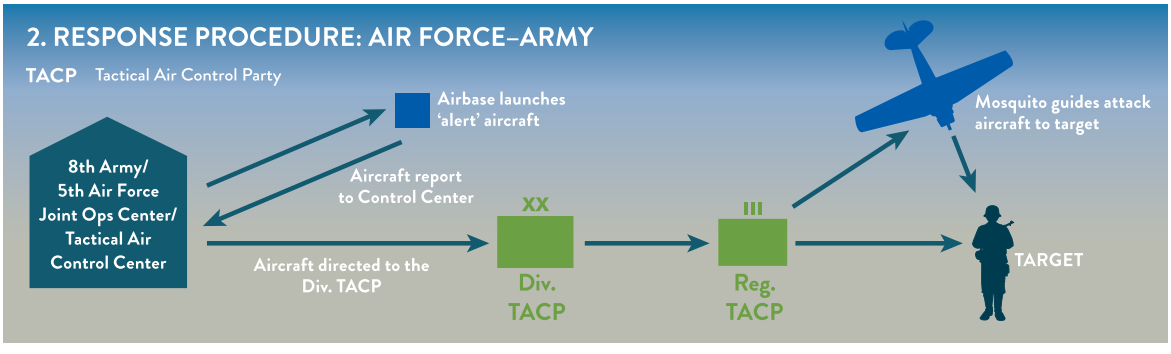
The Navy–Marine Corps and Air Force–Army systems of close air support (CAS) in Korea stemmed from diverging assumptions about airpower. The Navy–Marine Corps system assumed that ground forces (Marines) would need airpower to supplement their smaller artillery capability, with air strikes conducted rapidly after a request for a strike was received. In order for such requests to be answered quickly, lower-level ground formations (battalions) each had their own Tactical Air Control Party (TACP) that could communicate directly with the air support coordination unit which would connect fighter-bomber aircraft already on station with the TACP. The TACP would direct the aircraft to the target or use an airborne spotter aircraft to direct the fighter-bomber aircraft to the target, often within 10 to 30 minutes. A TACP was also located at each regiment and at the division level and these regimental and division TACPs would monitor requests from the battalion TACP, but they would only intervene if necessary. The system relied on having sufficient TACPs for each Marine ground unit headquarters, which in turn allowed the TACPs at the battalion level to direct fighter-bombers onto the target themselves.

In contrast, the Air Force–Army system assumed that Army units would use their artillery to provide for many of their fire support needs, that the Air Force would not have sufficient personnel to provide TACPs for each Army battalion, and that an Air Force officer ought to determine how and whether to respond to requests for CAS that had already been screened by the Army. An Army battalion's request for CAS would be reviewed and approved or denied at the regimental level, then again at the division level, then again at the corps level for some requests before being passed to the Joint Operations Center, (JOC) staffed by both Army and Air Force personnel. Each division typically had one or more TACPs, as did some regiments. At the Joint Operations Center, an Air Force officer would determine which requests would be fulfilled. Approved requests for CAS would be passed to aircraft on alert, which would then launch, fly to the target, and be put in contact with the division or regiment TACP. The division (or regiment) TACP would connect the fighter-bomber with either the forward air controller (a ground spotter) or an airborne controller, who would guide the fighter-bomber to the target. In the first months of the Korean War a lack of TACPs and an understaffed JOC led the Air Force to rely heavily on airborne controllers (known as Mosquitos) who would identify targets, request strikes, and direct fighter-bombers to the target. The heavy use of airborne controllers continued throughout the Korean War.


1. REQUEST FOR CLOSE-AIR SUPPORT: NAVY–MARINE CORPS
TACP Tactical Air Control Party
Requests for normal or call missions
Monitoring by intermediate commands
Tactical Air Control Center
XX
Div. TACP
III
Reg. TACP
II
Bn. TACP


2. RESPONSE PROCEDURE: NAVY–MARINE CORPS
Control follows this line
Alternate source of target information
Alternate source of aircraft
TACP Tactical Air Control Party
Airbase launches 'alert' aircraft
'On station' aircraft
Ground Force Observation Aircraft
Tactical Air Coordinator
Tactical Air Control Center
II
Bn. TACP
TARGET


1. REQUEST FOR CLOSE-AIR SUPPORT: AIR FORCE–ARMY
Air request
Mosquito Observation Aircraft
8th Army/ 5th Air Force Joint Ops Center/ Tactical Air Control Center
XX
Div.
III
Reg.
Ground request
II
Bn.
XXX
Corps
Normal/call missions
Pre-planned missions


2. RESPONSE PROCEDURE: AIR FORCE–ARMY
TACP Tactical Air Control Party
Airbase launches 'alert' aircraft
Mosquito guides attack aircraft to target
8th Army/ 5th Air Force Joint Ops Center/ Tactical Air Control Center
Aircraft report to Control Center
Aircraft directed to the Div. TACP
XX
Div. TACP
III
Reg. TACP
TARGET

the carrier task force, tended to have fewer cruisers as escorts than envisioned by Navy plans due to the need for cruisers to provide naval gunfire support.

PERSONNEL

The US Navy's active-duty personnel strength in June 1950 was approximately 375,000, a significant reduction from the World War II high of 3.4 million in 1945. This reduction was due to postwar demobilization and cuts in the Navy's budget. The postwar demand for sailors to return home quickly left the Navy with severe shortages, especially trained technicians. Exercises in 1946 in the Atlantic revealed the negative impact of these shortages on the fleet's capabilities, which forced the Navy to focus on elementary training. Personnel losses continued to be a problem in the late 1940s, and in the six months leading up to the Korean War, the Navy lost just over 33,000 active-duty personnel. Personnel shortages meant that ships in the active fleets operated with an average of 67 percent of their combat complements of personnel. In particular, shortages of experienced petty officers and junior officers made it difficult for ships to maintain readiness. The initial operations of Naval Forces, Far East off Korea revealed that peacetime ships' complements of personnel were inadequate to support sustained wartime operations. The demands of sustained wartime operations required ships to be crewed at 20 to 50 percent above their standard complements and aircraft squadrons to be staffed at 50 to 100 percent above. Despite these issues, pre-war training generally proved to be sufficient for personnel to carry out their assigned missions during the Korean War. One exception was the general lack of familiarity of Navy aircrew with the Army and Air Force's system of providing close air support. Wartime operations, which regularly put Navy aircraft into this system, highlighted a need for greater training in this area for Navy aircrew.

The Baltimore-class cruiser *Toledo* sailing with Task Force 77 off Korea, September 6, 1951. The additional antiaircraft armament added during World War II can be seen in the bow. (NHHC)

The outbreak of the Korean War led to a major expansion in the Navy's strength. In the war's first year, the Navy's active-duty officer and enlisted strength grew from 375,000 to 732,000. The Navy's personnel strength in the Western Pacific (the overwhelming majority of which was committed to the Korean War) grew from 12,400 in June 1950 to over 70,000 by April 1951. Personnel deployed on destroyers in the Western Pacific rose from 2,600 to 12,300 during this period. An even greater growth occurred in the amphibious force, the capabilities of which proved so critical in the Korean War's first year. In

June 1950 there were 1,250 sailors in the amphibious force in the Western Pacific, and less than a year later, in April 1951, there were more than ten times more: 13,500. The significant personnel shortages at the start of the war improved significantly after October 1950, although shortages in specific areas remained, especially in the fields of communications and intelligence.

NAVAL PERSONNEL IN THE WESTERN PACIFIC (EXCLUDING MARINES)

Type/activity	Jun 50	Apr 51
Fleet carrier and air wing	2250	8500
Escort and light carriers and air wing	0	2460
VP, tenders, Fleet Aircraft Service Squadron	1000	3500
Battleships and cruisers	1500	6000
Destroyers (all types)	2600	12300
Escorts and frigates	0	2120
Submarines	400	435
Amphibious	1250	13500
Logistics force	1000	13000
Ashore	1700	7350
Mine vessels	700	1150
Total	**12400**	**70315**

Approx figures broken down by type command or activity
VP = Patrol planes
Source: Interim Evaluation Reports, Report 3, Reel 4, pp 1222

The Navy's personnel expansion was made possible in part by the activation of 182,000 reservists of whom around 127,000 were sent to ships. This activation brought a large body of experienced officers and petty officers from the Naval Reserve into service. In World War II the Navy's practice had been to use reserve sailors on smaller ships, such as destroyer escorts and amphibious ships. However, the reservists' performance in that conflict led the Navy to make wider use of reserve sailors in the Korean War. Reservists began arriving in Korea in significant numbers in late August 1950 and eventually made up roughly a quarter of the personnel in the Pacific Fleet, which included the Seventh Fleet. Some ships, such as the carrier *Princeton* (CV-37), were crewed almost entirely by reservists without prior experience in an Essex-class carrier. Furthermore, Naval Reserve air squadrons made significant contributions to the Korean War. The Navy brought over 20 squadrons manned by naval reservists back into service and many served on carriers in the Korean War. On the carrier *Boxer* 90 percent of the pilots in the air group were reservists in one deployment. A number of reserve squadrons were activated and then transitioned from propellor aircraft to jet fighters before deploying to Korea, a major transition both for aircrew and maintenance personnel. These reserve squadrons performed comparably to their active-duty counterparts. Reserve personnel necessarily required additional training to bring them up to speed on technical developments that had occurred since the end of World War II.

Despite the extensive use of reservists, the Navy's personnel expansion reduced the average experience level of sailors in the Seventh Fleet and Naval Forces, Far East. As a result, sailors needed additional on-the-job training once they joined their ship or unit. The increased need for training required senior petty officers to spend time conducting this training, as they had the extensive experience needed. While helpful for junior sailors, training took petty officers away from their primary duties, which had knock-on effects throughout the fleet. At times, the need for more personnel also led to them being assigned to areas with which they had little prior experience. For example, of the first 18 officers sent to work in the communications office of Naval Forces, Far East, only two had previous experience in communications.

INTELLIGENCE

The initial North Korean invasion of South Korea was not anticipated by US naval intelligence. As the North Koreans drove into the south, naval intelligence focused on gathering information on enemy troop dispositions, coastal conditions, and North Korean transportation networks. Aerial reconnaissance flights helped identify North Korean columns, which could then be struck. As ships operated in Korean waters, they also gathered intelligence on coastal

MINESWEEPING AT WONSAN

While the US Navy had developed an extensive minesweeping capability during World War II, the Navy did not prioritize minesweeping in the austere budgets of the late 1940s. At one point the Navy eliminated a separate rating for minesweeper sailors, reducing the attractiveness of retaining specialized minesweeping knowledge, though the rating was later restored. When the Korean War began, the Seventh Fleet had seven minesweepers, though three inactive reserve ships were soon activated for service in Korea. The Soviet Union provided North Korea with mines and experienced mine warfare personnel. These Soviet personnel oversaw the mining of Wonsan and Chinnampo, the port southwest of Pyongyang. Drawing upon Soviet expertise and using Soviet-provided mines, the North Koreans mined other ports including Inchon. UN forces first discovered mines off Chinnampo in early September 1950. Damage to four UN ships and the loss of the minesweeper *Magpie* in late September led Naval Forces, Far East to order all warships to remain farther off the coast to avoid shallow water mines.

Helicopter surveillance identified mines in Wonsan harbor on October 9 in preparation for the planned landing of X Corps at Wonsan. Minesweeping efforts began on the 10th, focused on a southern channel previously used by Soviet naval forces during the Soviet occupation, with the assistance of a helicopter to provide aerial mine spotting. The discovery of several lines of mines in the southern channel led to the abandonment of that channel and a focus on a northern one beginning on the 11th. Sweeping efforts picked up speed on the 12th with the arrival of three additional minesweepers, but this was countered by the loss of two ships (*Pirate*, AM-275 and *Pledge*, AM-277) to mines that same day. Republic of Korea Army units had already secured Wonsan on the 10th, which gave the minesweeping effort two days to plot mine locations and remove mines with divers without fire from shore. However, progress was further delayed by the discovery of additional mines on the 18th, and it was not until the 25th that a channel was fully swept. The 1st Marine Division could then land at Wonsan after a week of sailing back and forth at sea in their transports, waiting for a mine-free channel into the inner Wonsan harbor.

Moored mines
Magnetic mines
Ships sunk
Swept October 11
USS Pirate
USS Pledge
YMS-516
JMS-19
Original sweeping plan
(swept October 10)
Airstrip
Blue and Yellow beaches
WONSAN

A Grumman F9F-2P photo-reconnaissance Panther on the carrier *Philippine Sea* off Korea, April 1952. The camera is visible on the fuselage in front of the cockpit. (NHHC)

conditions, and in September 1950 began spotting North Korean-laid mines, especially around coastal ports. The North Korean practice of laying mines off the coast at night made the task of finding minefields difficult. Nighttime photographic capabilities were limited and the North Koreans and later the Chinese used small junks and sampans to place the mines.

In the early months of the war, the Seventh Fleet suffered from a shortage of trained intelligence personnel, which hindered the Fleet's ability to process intelligence. This shortage was corrected by early 1951 with the arrival of more personnel in theater, though a shortage of photographic interpreters remained an ongoing problem. Intelligence personnel were concentrated in the fast carrier task force at the operational level not at the Naval Forces, Far East level.

The demand for photo interpretation on carriers stemmed from the scale of aerial photography conducted by carrier-based aircraft. Each Essex-class carrier air group typically had three dedicated photo-reconnaissance aircraft, either prop Corsairs or jet Panthers and later jet Banshees. The Panther and Banshee, in particular, proved effective platforms for aerial photography, as their higher speed made them more difficult for ground defenses to target and allowed them to return to the carrier with photographs more rapidly. The relative proximity of the fleet carriers to the Korean coast led to a high number of strike sorties per day, which in turn called for a high number of pre-strike and post-strike photo-reconnaissance sorties. In the war's first year, the carrier task force found that more photo-reconnaissance aircraft were needed in order to fully evaluate the results of air strikes, especially on interdiction targets. Intelligence personnel on Essex carriers also found that the photo-processing facilities on these ships could not keep up with the scale of photographs taken by photo-reconnaissance flights.

Intelligence personnel played important roles in briefing and debriefing carrier aircrews while also creating reports based on their analysis of available intelligence. The primary intelligence source for carrier-based intelligence personnel was carrier photo-reconnaissance flights, although visual sightings by aircraft and surface ships, interrogations of enemy prisoners of war, and intelligence reports from the Army, Air Force, and Central Intelligence Agency (CIA) were also used. The ability of intelligence officers to effectively pull together information from these disparate sources varied. R. Adm. George Dyer, commander of Task Force 95 who had served in intelligence positions in World War II, complained in early January 1952 that "too many officers in the Navy

are in intelligence, not because of some special aptitude for intelligence, but because they did not have any special aptitude for anything else."

In addition to carrier-based reconnaissance flights, the Navy's land-based maritime patrol planes also provided valuable intelligence. Patrol planes like the PBM Mariner flew long missions on both Korean coasts to search for and track shipping to support the blockade of North Korea. These patrol planes also provided valuable weather reports that aided UN air operation planners at sea and on land.

Within the Seventh Fleet, intelligence officers found that different sources were more or less reliable depending on the content. For example, the Joint Operations Center-Korea was viewed as a reliable source of information on the location of the bomb line and tactical air control parties but less so on the location of enemy troops. The bomb line indicated the area in which air strikes had to be controlled by the operations center and beyond which such control was not required. Coastal guerilla operations provided useful information on Communist troop movements, supply concentrations, and coastal batteries. Such information was necessary for effective aerial interdiction and naval gunfire support, especially as the North Koreans and Chinese shifted their supply routes in response to the various UN interdiction campaigns.

Island War and Raids

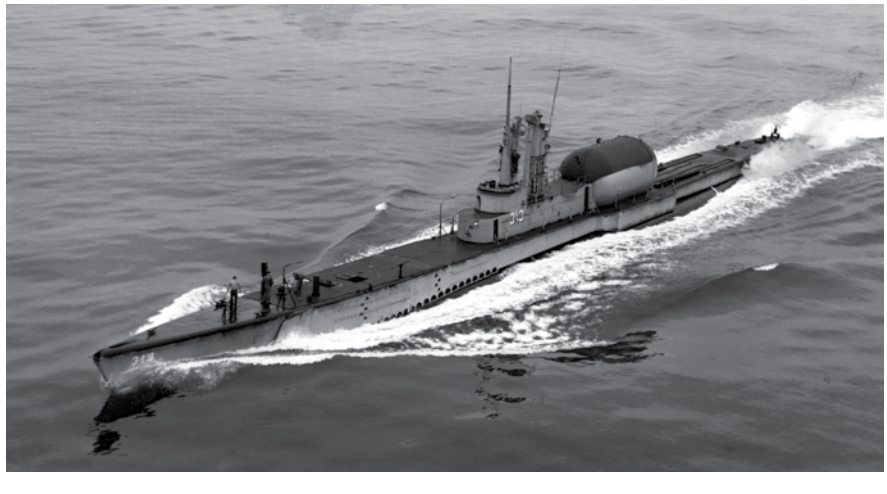
The reports provided by American and Korean forces and organizations operating on islands off both Korean coasts served as important sources of intelligence for the Seventh Fleet. UN forces occupied several islands off the west and northwest coast of Korea including Taehwa-do island which served as a base for anti-Communist North Korean partisans. These partisans launched raids and gathered intelligence in northwest Korea. On the east coast of Korea, US and South Korean marines seized Yeodo island and several other small islands in Wonsan harbor in February and March 1951, as well as Yang-do island off Songjin in northeast Korea. The operations conducted from these islands on both coasts led the Chinese to respond in early October 1951 with a series of landings and attacks on the islands around Taehwa-do off northwest Korea. Task Force 95 ships, such as the destroyer HMS *Cockade*, provided naval gunfire support for these islands' defenders, but ultimately in late 1951 Taehwa-do and the surrounding islands were secured by the Chinese.

At the same time as the Chinese were taking these islands, the Far East Air Force was establishing rescue facilities on the islands of Cho-do and Paengnyong-do off Korea between Seoul and Pyongyang. Air Force helicopters began operating from these islands to pick up downed aircrew and later early-warning radar was installed to track Communist jet fighters operating from Manchuria. In addition to the Air Force, Eighth Army, the Republic of Korea Army, and the Central Intelligence Agency also operated on islands off the coasts of Korea, as did a number of independent anti-Communist Korean

partisan groups. The islands provided strategically located sites for intelligence gathering, raids on North Korea, and identifying targets for naval gunfire or air strikes.

Due to the Chinese attacks on the northwest islands, Task Force 95 was given responsibility for defending the UN-held islands on both coasts in January 1952. Initially coordination between the wide array of organizations and Korean partisans operating on the islands proved challenging, but the situation improved in the second half of the war. The need for defense of these islands was highlighted in February 1952 when Communist forces landed on Yang-do island off Songjin, held by Republic of Korea marines. The marines beat off the invaders and the New Zealand frigate *Taupo* and the US destroyer-minesweeper *Endicott* (DMS-35) sank several small boats carrying North Korean troops back to the mainland while the US destroyer *Shelton* (DD-790) engaged shore batteries. This engagement highlighted Communist interest in driving the UN off the islands as well as the role of the Seventh Fleet in protecting these intelligence-gathering sites.

The coastal islands also provided ideal sites for launching raids on targets in North Korea. Other raids were launched from naval ships such as Task Force 90's four high-speed transports, classified as APDs, or the USS *Perch* (ASSP-313), a submarine capable of carrying over 100 raiders. In early October 1950, the *Perch* landed Royal Marine Commandos to sabotage a tunnel in northeast Korea near Tanchon. The Commandos also conducted several other raids from Task Force 90 transports as did Underwater Demolition Teams (UDTs) from the US Pacific Fleet. The UDTs, the predecessors of modern SEAL units, conducted raids on targets in North Korea and aided mine-disposal efforts from the APDs. UDT operations also involved inserting CIA-backed partisans into North Korea. The growth of North Korean and Chinese defenses along the coasts and the potential for casualties led to a reduction in raids by UDTs after the summer of 1952.



The *Perch* was a submarine transport capable of carrying small boats in the container behind the conning tower. These small boats could be used by raiders who operated from the submarine. (NHHC)

Locations from which UN intelligence and partisans operated
Pusan Perimeter Sep 1950
Furthest UN Advance Oct-Nov 1950
Cease Fire July 1953
CHINA
Vladivostok
Tuman
Aoiji
Synthetic oil production center
Hyesanjin
Task Force 77 area of responsibility
Yalu
Kilchu
Site of an airstrike on a bridge that proved difficult to keep out of action
Songjin
Suiho
Hydro-electric plant
MiG Alley
Tanchon
Site of a raid by Royal Marine Commandos
Andong
Sinuiju
Far East Air Force area of responsibility
Hungnam
Taedong
Sunchon
Taehwa-do
Wonsan
Pyongyang
TF 77 Normal operating area
Area covered by Operation Strangle
Chinnampo
Cho-do
Sea of Japan
Imjin
Paengnyong-do
Kaesong
Bukhan
Battle of Chumonchin Chan, 2 July 1950
TG 95.1 Normal operating area
Han
Inchon
Seoul
Namhan
Han River Estuary
UN frigates maintained a presence in the fall of 1951
Nakdong
Geum
Taejon
Pohang
Taegu
Yellow Sea
Masan
Kwangju
Pusan
Kosong
Site of an important close air support mission, August 1950
Honshu
JAPAN
Itazuke Air Base
Kyushu
U.S. Fleet Activities, Sasebo
N
0
100 miles
0
100km
124°
125°
126°
127°
128°
129°
130°
131°
132°
43°
42°
41°
40°
39°
38°
37°
36°
35°
34°
33°

LOGISTICS, FACILITIES, AND SUPPORT

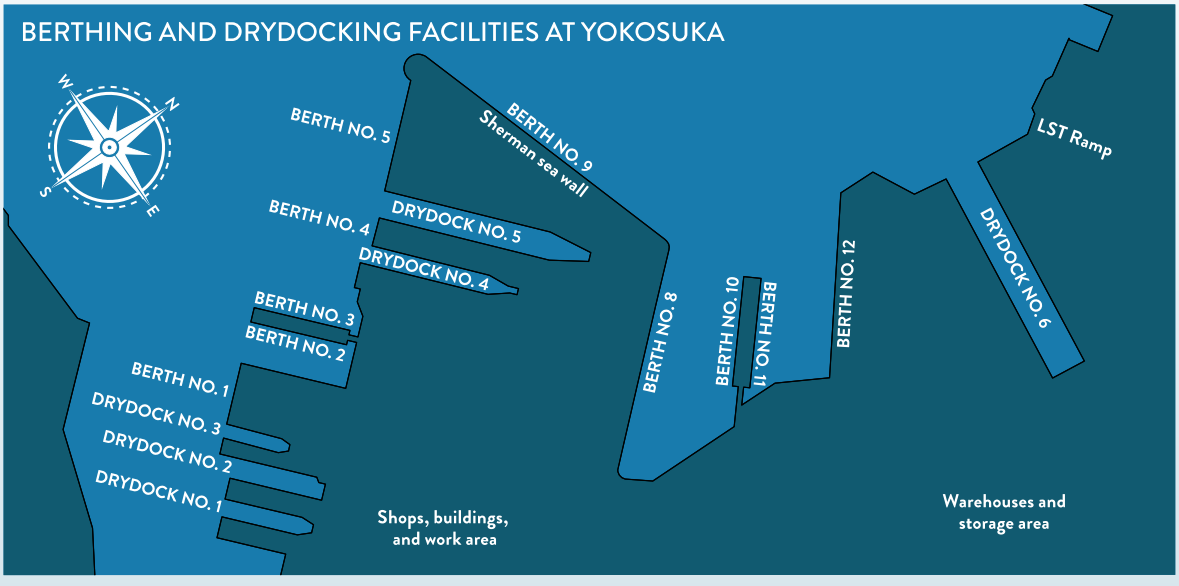
Naval logistics in the Korean War were marked by two overriding characteristics: the long distance to American sources of supply and production and the proximity to Japanese sources and US bases in Japan. Supplies coming from the American west coast had to travel 5,800 miles to reach Korea. This reality forced supply officers to project future supply needs due to the weeks of delay between placing an order and receiving supplies in either Japan or Korea. At the same time, Japan offered manufacturing capacity and ship-repair facilities within one day's sail from Korean waters.

In Japan, the two primary naval bases used by Naval Forces, Far East and the Seventh Fleet were Yokosuka and Sasebo. Yokosuka's naval facilities were located on the western side of Tokyo Bay, a little over 30 miles south of downtown Tokyo and had been used by the Imperial Japanese Navy from about 1870. The US Navy occupied Yokosuka at the end of World War II for use by Naval Forces, Far East. Sasebo's location on the western edge of the southern Japanese island of Kyushu was ideal for supporting operations in Korea. Sasebo was less than 150 miles from Pusan, the main port on the southern Korean coast. Like Yokosuka, Sasebo had served as a naval base for the Imperial Japanese Navy before being occupied in 1945. The US Navy's base at Sasebo was established in 1946 on the former Imperial Japanese Navy site. In June 1950, Yokosuka and Sasebo were considered second-tier bases in the Western Pacific as Manila in the Philippines and Guam in the Marianas had the most substantial facilities.

Logistical support for Korean War naval operations was provided by a combination of the ashore facilities of the naval bases in Japan, logistics ships in the Yokosuka and Sasebo harbors, and underway replenishment while at sea. The steady stream of naval reinforcements arriving in the theater led the Navy to expand the physical infrastructure of both Yokosuka and Sasebo. In particular, Sasebo's ammunition storage was overwhelmed in the early months of the Korean War. Sasebo was the ideal location for warships to replenish their ammunition, especially before mobile ammunition resupply ships arrived in theater. To resolve this issue, the Navy expanded Sasebo's naval ammunition storage capacity, borrowed an ammunition storage base from a nearby US Army site, and reactivated an old Imperial Japanese Navy ammunition facility. Yokosuka also grew to meet the growing demand for support both from the operating forces and the Navy population of the Tokyo Bay area, which expanded from just under 500 in July 1950 to over 7,500 by November 1950.

The Navy also found that its capacity for aviation maintenance and repair work in the region was insufficient to support wartime naval air operations. At the start of the war, the single Navy airfield in Japan was at Yokosuka and was designed for seaplane operations. Furthermore, there were no naval aviation supply facilities in Japan. To provide operating bases for maritime patrol planes

Yokosuka Naval Base

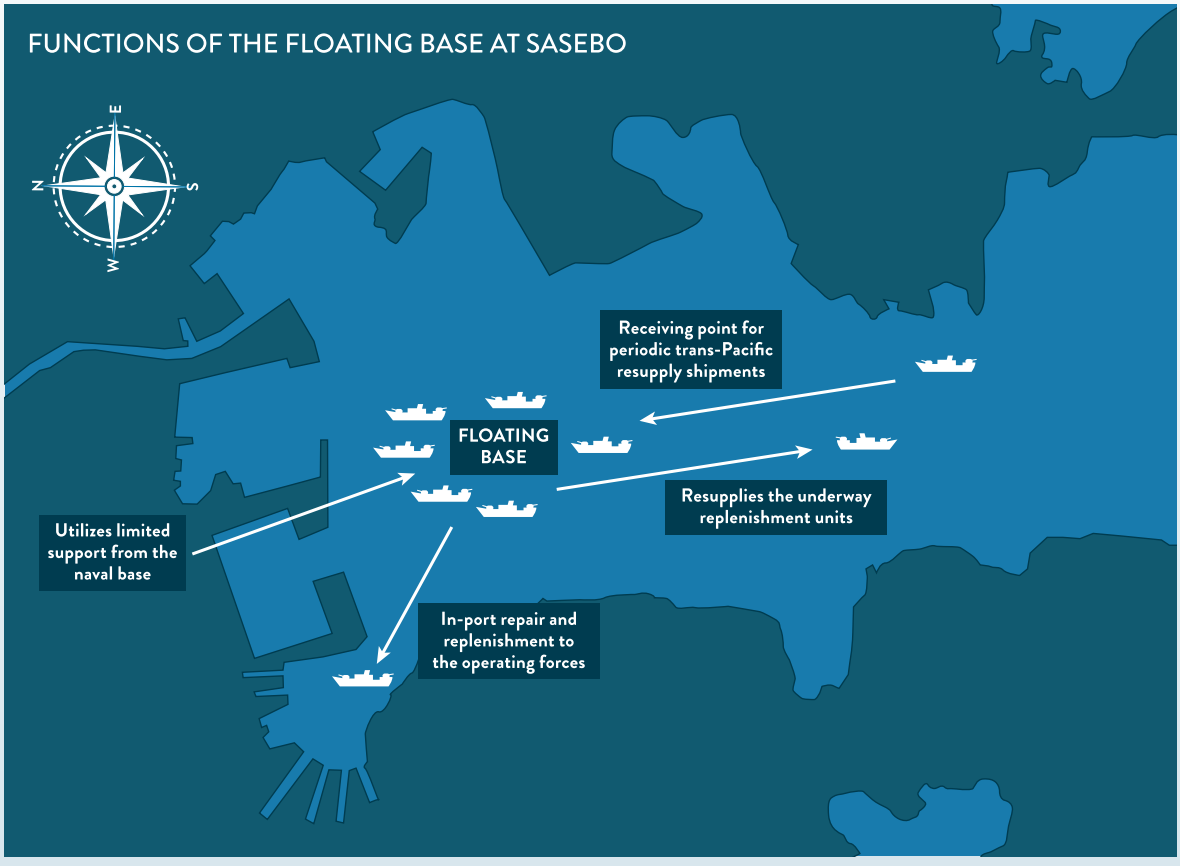


The drydock facilities at Yokosuka performed maintenance and repair work on hundreds of ships throughout the course of the Korean War. The location of these dry docks near Korea allowed ships to spend more time on station and less time transiting to and from a more distant naval base. The growth of the fleet in the fall of 1950 led the Navy to double the number of personnel assigned to ship repair at Yokosuka, significantly increasing Yokosuka's maintenance capabilities. Yokosuka relied heavily on Japanese civilians to work in the berths and drydocks, many of whom had worked in the facility when it was run by the Imperial Japanese Navy. In 1951, an average of 18 ships were drydocked at Yokosuka each month to receive maintenance and repair work.

and facilities to repair and house spare aircraft for the carrier air groups, the Navy activated several aviation supply and repair ships, such as the aviation supply ship *Jupiter* (AVS-8), which were deployed to Japan. The Navy also secured access to several Far East Air Force airfields such as Kisarazu on the other side of Tokyo Bay from Yokosuka and Atsugi to the northwest of Yokosuka to provide support for carrier air groups.

Carrier air groups in the Korean War typically lost about 10 percent of their propeller-driven fighters each month due to damage or write-offs, apart from combat losses. Aviation maintenance facilities at Yokosuka returned some of these aircraft to service while also preparing newly arrived aircraft for delivery to the carriers. The Navy also used other Air Force sites around Japan as bases for Navy maritime patrol planes such as the PBM Mariner. The Navy began operating a small carrier on-board delivery service out of Itazuke Air Base in northern Kyushu. Six TBM Avengers shuttled back and forth from Itazuke to Task Force 77 carrying personnel and high-priority supplies, equipment,

Mobile Logistics in Port


FUNCTIONS OF THE FLOATING BASE AT SASEBO
E
N
S
W
Receiving point for periodic trans-Pacific resupply shipments
FLOATING BASE
Resupplies the underway replenishment units
Utilizes limited support from the naval base
In-port repair and replenishment to the operating forces

Ships operating off Korea received logistical support from three sources. For example, a ship might receive fuel from an oiler at sea, travel to Sasebo to receive food and spare parts from the supply ships in the harbor, and at Yokosuka undergo dry dock maintenance performed by the onshore facilities. Receiving support from logistics ships at sea or in port gave the fleet the advantage of mobility and flexibility, since the logistics ships themselves were mobile. At the same time, the presence of onshore facilities with greater storage capacity than on ships allowed the fleet to build up accessible reserves of supplies. For example, in the first three months of the Korean War, the fleet's ammunition expenditures neared the total ammunition available each month. However, by early 1951, a healthy ammunition reserve had been built up using shore-based storage.

and mail. These steps improved the Navy's ability to sustain naval aviation in the Korean War.

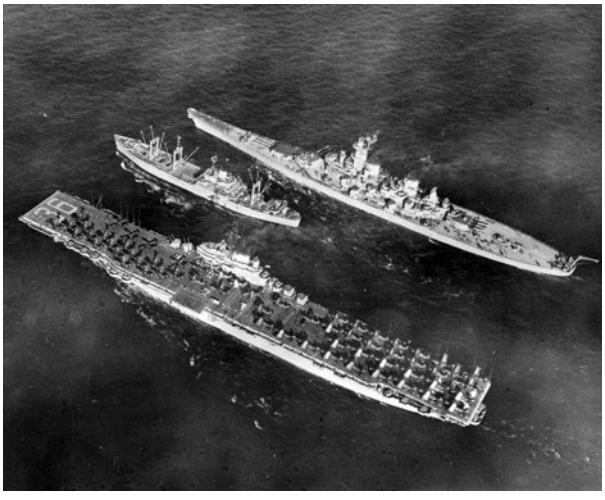
Supply officers on ships arriving at either Sasebo or Yokosuka for replenishment would send a signal with their supply requirements to the base. The base would find the items requested on the logistics ships in harbor where they would be reserved for the incoming ship. These logistics ships served as floating warehouses

and held the bulk of supplies needed by the Fleet. By keeping large quantities of supplies on ships rather than in warehouses ashore, the Fleet's logistics could be moved to another location, thus preserving the inherent mobility of naval forces. The base would then reply to the supply officer listing which items were reserved and their location and which items were not available. This system allowed the supply officer to know in advance which items were in stock and which were not rather than finding out upon arrival at a logistics ship. The Fleet drew on a combination of such in-port support as well as at-sea logistical support.

Sasebo harbor, December 1950. The ammunition ship *Mount Katmai* (AE-16) is on the left in this view taken from the carrier *Princeton* (CV-37). Sasebo's proximity to Korea made it an ideal logistical hub for naval operations. (NARA)

During World War II, the US Navy relied heavily on underway replenishment, the process of resupplying warships at sea using hoses, lines, and cargo transfers between these warships and specially designed logistics ships. In particular, underway replenishment allowed carrier task forces to remain at sea for extended periods of time, since the task force's supplies were brought to the task force, rather than the task force returning to port to replenish and refuel. However, at the start of the Korean War, the Navy had no organized logistics force in the area to carry out sustained underway replenishment and only one oiler capable of underway replenishment in the region. To address the first concern, Service Squadron Three was established on July 10, 1950 to organize and provide logistical support for naval forces in the Korean War. Over the following weeks, more underway replenishment ships arrived in Korean waters, so that by mid-November seven such ships were providing at-sea replenishment, resolving the second issue.

The carrier task force, Task Force 77, relied on underway replenishment more than any other formation in the Seventh Fleet. For example, in December 1950 Task Force 77 received 90 percent of its supplies from replenishment at sea and only 10 percent while in port, which enabled the carriers to remain on station off Korea, launching sorties. The unique character of the Korean War and the resulting high expenditure rates for ammunition and aviation fuel created logistical challenges for the carrier task force. The Essex carriers had been designed with long-range warfare against distant targets in the Pacific in mind. Their fuel and ammunition storage facilities were designed to support 10 days of flying out of every 16 days at sea before replenishing. However, off Korea, carrier aircraft were flying more frequently and launching multiple sorties per day, due to the short flight times from the carrier to Korea. The lack of enemy air and naval opposition at sea allowed the carriers to operate relatively close to the Korean coast, which in turn allowed for more frequent offensive sorties. As a result, the carrier's air group



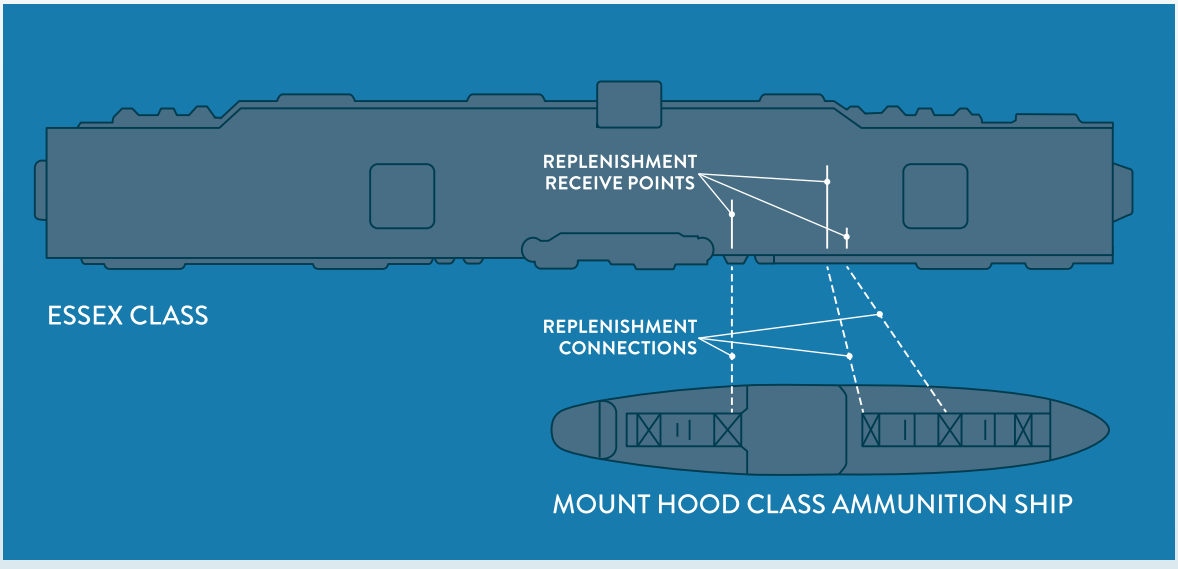
The ammunition ship *Rainier* moves ahead of the carrier *Antietam* and the battleship *Wisconsin* after completing a replenishment cycle, February 8, 1952. (NARA)

expended ammunition at a higher rate than designers had expected. Furthermore, the task force's defensive needs could be met with a small standing combat air patrol, allowing the overwhelming majority of the air group to be devoted to offensive operations, which in turn led to an even higher use of ammunition. In addition, the introduction of more capable aircraft, such as the AD Skyraider, increased the average amount of ordnance that each sortie could carry. By 1952, carrier air groups were expending 75 tons of aircraft ammunition every day that they were flying. Finally, the advent of jet fighters, such as the F9F Panther, dramatically increased the average rate of aviation fuel consumption per sortie. A Panther squadron could consume 20 percent of a carrier's aviation fuel supply in a single day of flight operations. Altogether, the combination of limited air and sea opposition and the increase in daily offensive sorties, which expended more ordnance and consumed more fuel than the Essex class was designed to handle, led to a dramatically increased demand for ammunition and aviation fuel from logistics ships.

Task Force 77 generally replenished at sea every three to four days, depending on the intensity of flying operations and the weather. In a typical replenishment cycle, the task force would form into one or two lines behind the replenishment group, which typically consisted of two oilers, one ammunition ship, one stores ship, and sometimes one provision ship. Each ship in the task force would make three or four stops as it moved up the line of replenishment ships. The first stop was typically the oiler (AO), where a carrier would take on bunker oil as well as aviation fuel for two to three hours. The transfer of aviation fuel often took longer than the transfer of bunker fuel, due to the high consumption of aviation fuel by jet fighters and the lower capacity transfer of the hoses. Destroyers were refueled more rapidly and could also refuel directly from the carriers at night after flying operations were concluded. After fueling, the carrier would come to the ammunition ship (AE) for another two to three hours. Ammunition transfer went fastest when the carrier communicated its specific ammunition needs to the ammunition ship in time for the AE's crew to break out the requested ammunition. The AE did not have enough crew to simultaneously break out ammunition while

Task Force 77 is shown at sea conducting an underway replenishment, June 2, 1953. The carrier *Boxer* is refueling from an oiler that is simultaneously refueling a destroyer. (NARA)

Ammunition Replenishment



This diagram shows the locations on an Essex carrier and an ammunition ship (AE) between which ammunition would be transferred during an underway replenishment. In October 1951, carriers typically received 110 short tons of ammunition per hour when resupplying from an AE. In contrast, battleships and cruisers could receive 45 short tons per hour. Carriers could be replenished faster than other ships because the large hangar deck allowed ammunition to be stacked there and stored below later. As a result, personnel on carriers could focus on receiving ammunition from the AE and storing it later rather than receiving the ammunition and then immediately storing the ammunition below. Battleships and cruisers did not have as much space, which meant their personnel had to be divided between receiving ammunition and taking the ammunition below. As the war progressed, ammunition resupply rates increased as personnel gained more experience and techniques were improved. For example, in February 1953, the average carrier ammunition replenishment rate was 125 short tons per hour, while the average cruiser rate was 79 short tons per hour. The maximum replenishment rate for a carrier in 1953 was 258 short tons in an hour.

rapidly transferring ammunition. Once transferred, the ammunition had to be stowed on the carrier, which took the carrier's crew several more hours. Ammunition transfer rates improved as crews gained experience throughout the war. Finally, the carrier would stop at a stores ship or a provision ship to receive food, equipment, mail, and personnel.

For most of the war, underway replenishment of Task Force 77 occurred during the day. However, in late 1951, the Seventh Fleet began experimenting with night replenishment, bringing the first ships to be replenished alongside several hours before daybreak. Doing so allowed more time for transfers on replenishment days. By early 1952, this type of night replenishment was standard practice. In June 1953, as the armistice negotiations approached

an agreement, a series of Communist offensives sought to secure additional territory and to target South Korean forces in response to President Syngham Rhee's release of South Korean held prisoners. As a result, Task Force 77 began a maximum effort air campaign against Communist forces. On June 15, 1953 the carrier *Princeton* established a new record for offensive sorties, flying 184 sorties in a single day, roughly double that which had been an average day's flying at the start of the war. To make this intensive air effort possible, Task Force 77 began conducting true nighttime replenishment. Working through the night, some replenishment cycles ended at 0400hrs. In the months of June and July 1953, 38 percent of all full-scale replenishments were conducted at night in a variety of weather conditions. During these night replenishments, ships used red lights on cargo decks and fueling equipment to provide sufficient visibility. The Seventh Fleet's extensive experience in underway replenishment made this widespread use of nighttime replenishment possible, though at a cost in crew rest.

TYPICAL TASK FORCE 77 UNDERWAY REPLENISHMENT ELEMENT	
Tankers	2
Ammunition Ships	1
Stores Ships	1
Provisions Ships	1
Sometimes only a stores ship or a provision ship would be included rather than both.	

The Seventh Fleet made significant use of Japanese services and supplies during the Korean War. Supplies such as fuel-drop tanks that were purchased in Japan did not have to be transported across the Pacific, saving scarce shipping capacity. Japan also provided important services. As the Seventh Fleet expanded, the ship repair facilities at Yokosuka and Sasebo were at times overwhelmed. During periods of high-intensity operations, such as the defense of the Pusan perimeter (July to September 1950) and the retreat along the Chosin Reservoir (November and December 1950), demand for underway replenishment increased while maintenance needs were deferred. When the period of high-intensity operations was over, a wave of ships needing maintenance and repairs headed for Sasebo and Yokosuka. As a result, during the winter of 1950/51 Yokosuka focused on performing repair work on naval combatants such as destroyers and cruisers while private Japanese shipyards were contracted to handle repair work on amphibious and logistics ships. One of these shipyards was Central Japan Heavy Industries, which later became part of Mitsubishi. The Navy's use of Japanese sources for supplies and services declined in late 1951, due to Japan's economic growth and the resulting inflation, though use of Japanese sources rose again in 1952. In addition to relying on Japan for services and supplies, the bulk of the Seventh Fleet's fuel for its ships came from the Persian Gulf. Naval Forces, Far East staff were concerned throughout the war about relying on such non-US sources, but doing so kept costs down.

COMBAT AND ANALYSIS

THE FLEET IN COMBAT

Defense of the Pusan Perimeter

On June 25, 1950, North Korea invaded South Korea. Two days later, President Truman committed US naval and other military forces to the defense of South Korea. The nearest US naval forces were a small cruiser-destroyer force in Japanese waters led by the light cruiser *Juneau* (CL-119) and under the overall command of V. Adm. Turner Joy, Commander, Naval Forces, Far East. Joy ordered this cruiser-destroyer force into Korean waters to intercept North Korean shipping and provide naval gunfire support. By the end of June, Joy gained command of the Seventh Fleet under V. Adm. Struble, which included Task Force 77 built around the Essex-class carrier *Valley Forge*. President Truman also ordered the Seventh Fleet to neutralize the Taiwan Strait, preventing a Communist invasion of Taiwan or a Nationalist landing on the mainland. British and Australian naval forces, including the light carrier HMS *Triumph* under British R. Adm. William Andrewes, also reported to Joy and Canada and New Zealand promised naval contingents that would arrive in late July and early August. Additional naval reinforcements from the US Pacific Fleet arrived throughout the summer and fall, including four more Essex-class carriers by the end of the year. These reinforcements steadily increased the ability of Naval Forces, Far East to support the defense of South Korea.

A carrier and destroyer are shown refueling from an oiler with two more destroyers waiting behind, June 1953. The destroyer on the far right is the *Radford* and the photo was taken from the cruiser *Manchester*. (NHHC)

On July 1, 1950, days after the North Korean attack, senior British and American officers met to plan their coordinated naval response on the Baltimore-class heavy cruiser *Rochester*. From left to right are Capt. Arthur Torlesse, Royal Navy, Captain of the carrier HMS *Triumph*; R. Adm. John Hoskins, US Navy, Commander, Carrier Division Three; V. Adm. Arthur Struble, US Navy, Commander, Seventh Fleet; R. Adm. William Andrewes, Royal Navy, Flag Officer, Second-in-Command, Far East. (NARA)

Two small naval engagements in the early days of the war established UN naval superiority. On June 26, a Republic of Korea patrol craft sank a North Korean transport carrying 600 troops headed for the key southeastern port of Pusan. If such a landing had gained control of Pusan, even only temporarily, then the arrival of US ground reinforcements would have been significantly delayed, which could have undermined the defense of the Pusan perimeter in the coming months. A few days later on July 2, an Anglo-American surface force including the cruisers USS *Juneau* and HMS *Jamaica* destroyed five North Korean torpedo boats and light craft escorting ammunition supply trawlers off Chumonchin Chan (Chumunjin) on the east coast of Korea just south of the 38th parallel. The next day, Task Force 77 aircraft from the *Valley Forge* and *Triumph* began striking airfields and military targets in and around Pyongyang from the Yellow Sea. These initial operations, in which UN naval forces supported ground forces while facing no significant naval opposition from enemy naval forces, set a pattern that held throughout the Korean War.

More ground forces were needed, so Gen. MacArthur committed three of the four divisions in Eighth Army in Japan to the defense of South Korea in early July. These formations were moved from Japan to Korea by the end of July through a combination of US Navy amphibious shipping, freighters, and amphibious ships controlled by the Allied occupation authority for Japan, and chartered Japanese merchant shipping. A multinational collection of frigates escorted convoys to and from Pusan as supplies and reinforcements continued to flow into South Korea. For example, in early August, the 2nd Infantry Division and the 1st Provisional Marine Brigade would arrive in South Korea at Pusan from the United States escorted by UN frigates. Naval Forces, Far East's control

of the waters between Japan and South Korea made this rapid reinforcement possible. Naval commanders feared Soviet naval intervention, which might threaten UN naval superiority, but this never materialized. During the Korean War, Stalin kept Soviet submarines from interfering with UN naval operations. However, concerns over a possible Soviet air and submarine threat kept Task Force 77 based at Okinawa in July, before shifting bases to Sasebo in August. Operating out of Okinawa reduced Task Force 77's time on station, due to the time required to transit back and forth between Okinawa and Korean waters.

TABLE OF US NAVAL BUILD-UP, JUNE–NOVEMBER 1950

Type	June 25, 1950	November 20, 1950
Battleships		1
Aircraft carriers	1	5
Cruisers	2	4
Destroyers	12	43
Patrol craft		13
Minesweepers	7	17
Amphibious	5	60
Service force	5	35

Throughout July, *Valley Forge*'s and *Triumph*'s air groups provided close air support for South Korean and American ground forces, while also flying interdiction strikes against North Korean supply routes. The arrival of the carriers *Philippine Sea* (CV-47), *Sicily*, and *Badoeng Strait* in early August increased the Navy's ability to provide air support. *Sicily* and *Badoeng Strait* operated Marine fighter squadrons, which alternated between flying from carriers and airfields on land. These Marine squadrons focused on providing close air support for ground forces, while Task Force 77 split its sorties between close air support and interdiction.

The North Korean People's Army's conventional armor and motorized offensive was quite susceptible to air strikes from Navy, Air Force, and Marine aircraft. For example, on August 11, a convoy of over 200 North Korean vehicles near Kosong near the southern coast was struck repeatedly by Marine Corsairs from the escort carriers along with US Air Force F-51s, destroying over 100 vehicles. In early August, these Marine Corsairs provided effective close air support for Marine and Army forces that helped halt a drive along the southern coast by the North Korean 6th

The cruiser *Helena* provides naval gunfire support off the east coast of Korea, August 1950. Cruisers from Naval Forces, Far East provided valuable floating artillery for the Republic of Korea forces defending the east coast of Korea in the fall of 1950. (NHHC)

Division. This close air support then aided a Marine and Army counterattack that drove the North Koreans back. North Korean supply convoys carrying fuel, ammunition, and equipment were repeatedly attacked, forcing the North Koreans to eventually only move these convoys at night. Cruisers and destroyers provided naval gunfire support, especially on the east coast of Korea where Republic of Korea (ROK) forces defended against repeated North Korean offensives. For most of August 1950, a light cruiser or a heavy cruiser such as the *Helena* (CA-75) served as floating artillery for the ROK 3rd and Capital Divisions. When the 3rd Division was surrounded on August 10 just north of Pohang, Task Force 90's amphibious ships evacuated the Division's 10,000 troops and equipment on August 16 and 17, moved them 20 miles south, and landed them just south of Pohang, where the 3rd Division returned to the fight.

During this initial phase of the Korean War, the carriers of Task Force 77 moved back and forth between the east and west coasts of Korea. After the landing at Inchon in mid-September the Essex-class carriers of Task Force 77 operated off the east coast, while a rotation of British, American, and later Australian light and escort carriers in Task Force 95 provided air support from the west coast. On each coast, a support group of cruisers and destroyers, also from Task Force 95, provided naval gunfire support and enforced a blockade of North Korea. The support provided by Naval Forces, Far East enabled the reinforcement of South Korea with ground forces in the summer of 1950 and helped those ground forces hold the Pusan perimeter.

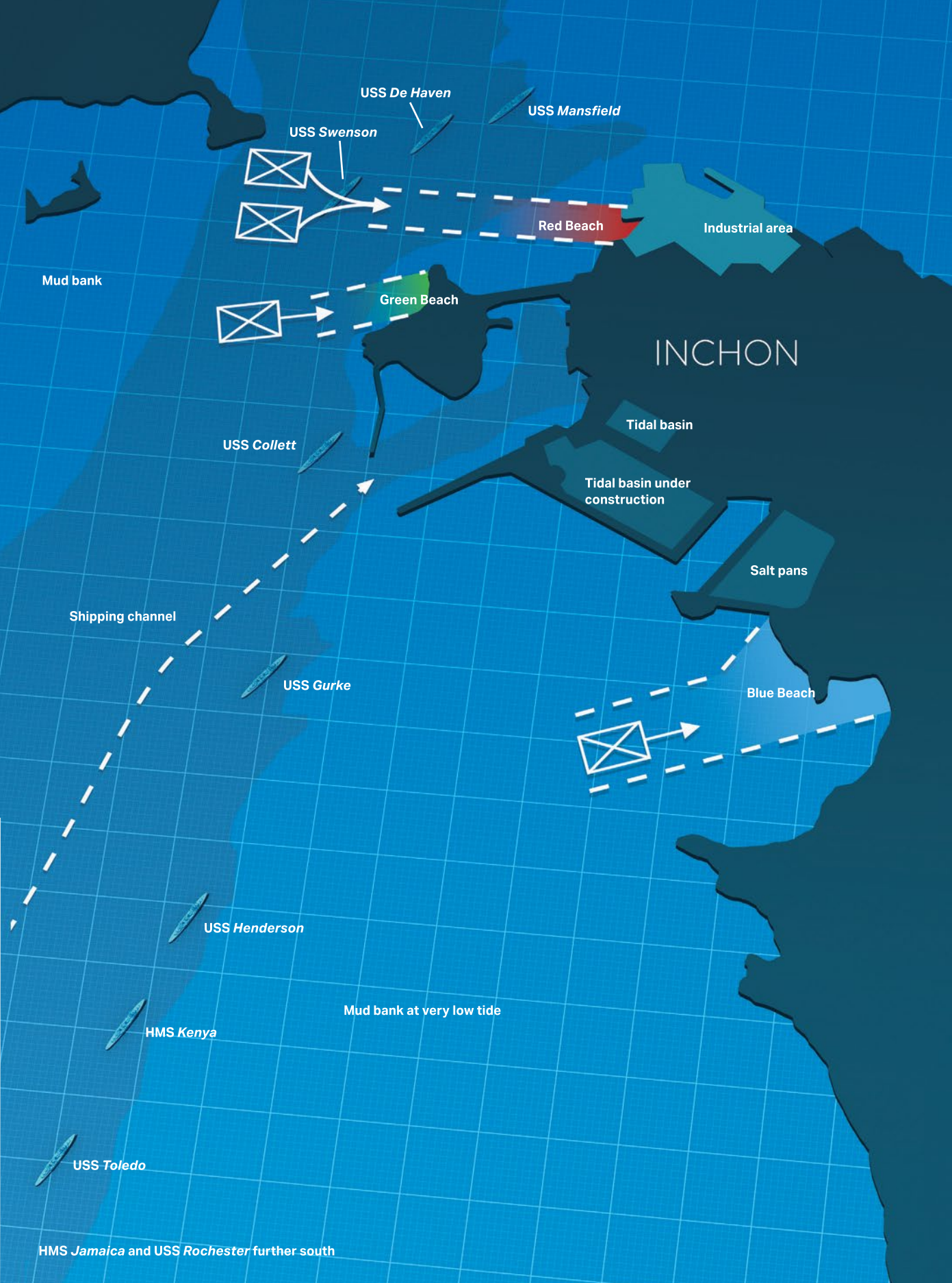
Inchon Landing and Drive to the Yalu

As the North Korean People's Army drove into South Korea, Gen. MacArthur began considering an amphibious landing in their rear to cut off the invading forces. Far East Command had an existing amphibious capability in Task

AMPHIBIOUS LANDING AT INCHON

General MacArthur insisted that Inchon be the site of the amphibious landing that would begin the campaign to remove North Korean forces from South Korea despite the concerns raised by Navy and Marine Corps planners. These concerns stemmed from the difficult tidal conditions at Inchon and the limited landing sites. The water level at Inchon varied by roughly 30ft due to tides. At low tide extensive mud banks were visible, limiting deep draft ships to the narrow Flying Fish channel, which wound its way into Inchon from the Yellow Sea. A steady current in the channel heading out to sea further complicated navigation. The island of Wolmi-do, just west of Inchon, bordered this channel and was a natural defensive outpost. For the landing on Inchon itself, the Marines had to scale a seawall that protected Inchon from the regular water level changes due to the tides.

Due to these difficulties, close in fire support for the Inchon landing could only be provided by destroyers in the channel and rocket firing amphibious craft. Supporting cruisers had to remain further south. The significant change in water level meant that amphibious ships, such as LSTs that ran up on the shore at Red Beach on the afternoon of September 15, had to remain on the beach until high tide the next morning, a vulnerable position.


USS De Haven
USS Mansfield
USS Swenson
Red Beach
Industrial area
Mud bank
Green Beach
INCHON
Tidal basin
USS Collett
Tidal basin under construction
Salt pans
Shipping channel
USS Gurke
Blue Beach
USS Henderson
Mud bank at very low tide
HMS Kenya
USS Toledo
HMS Jamaica and USS Rochester further south

Joint Task Force 7 (Vice Admiral Arthur Struble)

Task Force 90, Attack Force (Rear Admiral James Doyle) Amphibious ships, cargo ships, 2 escort carriers, 5 cruisers, 13 destroyers, 8 frigates	Task Force 91, Blockade and Covering (Rear Admiral William Andrewes, Royal Navy) 1 light carrier, 1 cruiser, 8 destroyers	Task Force 92, X Corps (Major General Edward Almond, U.S. Army) 1st Marine Division, 7th Infantry Division
Task Force 99, Patrol and Reconnaissance Force (Rear Admiral George Henderson) 3 tenders, 5 patrol squadrons	Task Force 77, Fast Carrier Force (Rear Admiral Edward Ewen) 3 fleet carriers, 1 cruiser, 14 destroyers	Task Force 79, Service Squadron (Captain Bernard Austin) 21 logistic support ships

Force 90, which consisted of five amphibious ships under R. Adm. James Doyle. Doyle had extensive amphibious experience from World War II in which he served as the operations officer for the Guadalcanal landing and later as an amphibious planner in Washington, DC. When the invasion began, Doyle's ships had recently arrived in Japanese waters to begin training with the Eighth Army in amphibious operations. Their presence proved invaluable in the early months of the Korean War. Doyle and his staff initially considered landing Eighth Army's 1st Cavalry Division at Inchon in early July. However, the division was needed to resist the North Korean advance and instead was landed by Task Force 90 at Pohang beginning on July 18.

Naval intelligence evaluated a number of sites along the west coast of Korea as part of the planning for an amphibious landing behind North Korean lines. MacArthur wanted the landing to occur at Inchon, which was near the capital Seoul; the airfield at Kimpo; and along several routes that the North Korean Army was using to supply its forces further south. However, Inchon presented several difficulties as an invasion site. The channel for amphibious and gunfire support ships to approach Inchon, Flying Fish channel, was narrow and difficult to navigate because of mud, currents, and wide swings in the tide. A small team of Americans and Koreans scouted the Inchon region prior to the landing, verifying the tidal conditions and discovering coastal defenses on the island of Wolmi-do. The island was to the immediate west of Inchon and connected to the city by a half-mile causeway. Wolmi-do's defenses commanded the approaches to Inchon. To protect Inchon from the significant tidal swings, a seawall had been constructed. Any troops landing at Inchon would have to cross this seawall, which formed a natural defensive position, and would then be in the center of the city. Furthermore, any landing would have to occur at high tide. At high tide the water would cover the mudflats just outside the city, which led planners to select September 15 as the invasion date, due to tidal and weather conditions. One Marine battalion would land with the morning high tide to seize Wolmi-do and the main landing would follow in the late afternoon.

The invasion would be conducted by Joint Task Force 7, a new headquarters created for the invasion and headed by V. Adm. Arthur Struble, who retained

his position as Commander, Seventh Fleet. The ground force consisted of X Corps, a new headquarters that was established separate from Eighth Army, and the landings themselves were spearheaded by the 1st Marine Division. Command of the ground force would shift to Maj. Gen. Edward Almond, X Corps commander, after the ground force was established ashore in line with US Navy and Marine Corps doctrine. Joint Task Force 7 consisted of several subordinate task forces including the attack force, Task Force 90, headed by R. Adm. Doyle, and Task Force 77, the fast carrier task force. Conducting an amphibious landing with a two division-sized force required more than just the five amphibious ships in Task Force 90 when North Korea attacked. Shipping for Inchon was provided by Doyle's existing Task Force 90, Japanese shipping under UN control or charter, as well as reinforcements from the US. For example, the ships that landed the 1st Provisional Marine Brigade at Pusan in early August also participated in the Inchon landing.

Struble's force of roughly 230 ships, two divisions, and 21 squadrons of aircraft highlighted the range of capabilities needed for an amphibious landing: landing craft to put ashore the initial waves of ground forces, transports carrying follow on forces, escorts to guard against air or submarine attack, cruisers and destroyers to provide naval gunfire support, patrol aircraft to scout around the invasion convoy, carriers with aircraft to provide air cover and close air support, and logistics ships to resupply, rearm, and refuel. Struble excluded the Far East Air Force from operating in the Inchon area, with a few minor exceptions, in order to avoid inter-service coordination challenges.

Air strikes on Inchon to prepare for the landing began on September 10 and were followed by two days of naval bombardment beginning on September 13 to destroy North Korean coastal defenses. On the 13th, six destroyers,

INCHON (overleaf)

The landing at Inchon on September 15, 1950 took place in two phases. In the early morning at high tide, a battalion of Marines landed on the island of Wolmi-do to secure it before additional landings took place at the afternoon high tide. This two-phase approach removed the element of surprise for the afternoon landings; however, both landings were supported by significant air and naval fire support. Fire support came from several destroyers including the *Lyman K. Swenson* (shown here) positioned near Wolmi-do as well as a cruiser force that included *Toledo*, *Kenya*, *Rochester*, and *Jamaica* further south. Several amphibious ships equipped with rocket launchers smothered the island with rocket fire. In addition, extensive air strikes were conducted by Marine, US Navy, and Royal Navy aircraft operating from carriers off the coast. Collectively, the air and naval bombardment produced considerable smoke, although spotting aircraft provided guidance for the bombarding warships. The Marines secured Wolmi-do by noon, defeating the 400 North Korean defenders. The bombardment for the afternoon landings was similar to that in the morning and included the firing of 6,000 rockets by rocket-equipped amphibious ships. The Marines landed in the afternoon and by midnight had established a firm beachhead for further operations. Throughout the coming days, the cruisers and carriers would continue to provide fire support for the Marine drive to recapture the South Korean capital, Seoul.

backed by two British and two American cruisers, sailed to within 800 yards of Wolmi-do, inviting North Korean batteries to reveal themselves. When they did so, the destroyers and cruisers poured almost a thousand rounds into the exposed North Korean artillery positions both on the island of Wolmi-do and on Inchon itself. The destroyers returned to the inner harbor on the 14th and faced considerably less resistance than the previous day. The stage was set for the two-part landing on the 15th.

The sun was just below the horizon on September 15, 1950 when the cruisers USS *Toledo* (CA-133), USS *Rochester* (CA-124), HMS *Kenya*, and HMS *Jamaica* and seven destroyers began their pre-invasion bombardment. The warships were followed by Marine Corsairs flying from the carriers *Sicily* and *Badoeng Strait*, which in turn were followed by three landing vessels converted into rocket ships that fired hundreds of rockets. The landing craft carrying the 3rd Battalion, 5th Marine Regiment landed on Green beach on Wolmi-do just after 0630hrs and the Marines secured the island that morning, paving the way for the late afternoon landings in the city of Inchon itself. After another round of naval gunfire and air strikes on the city of Inchon, Marines landed on Red and Blue beaches, driving back North Korean defenders. The Marines' progress allowed Landing Ship Tanks (LSTs) to begin landing at Red beach to unload supplies and equipment to sustain operations ashore. Over the coming week, the Marines drove inland with naval and air support from Struble's command, while the remainder of X Corps began to land. In the first week after the invasion, Joint Task Force 7 landed over 50,000 personnel and 6,500 vehicles at Inchon. The UN naval command of the sea enabled the projection of ground forces ashore at Inchon, surprising North Korean commanders, who were now in danger of being caught between X Corps in the north and Eighth Army in the south.

The day after the landings at Inchon, Eighth Army attacked out of the Pusan perimeter and linked up with X Corps on September 27. The North Korean army was in general retreat by the end of September with Eighth Army driving north in pursuit. In mid-September the Truman administration authorized ground forces to enter North Korea to complete the destruction of the North Korean army. To accomplish this task, Gen. MacArthur and his staff planned to land X Corps at Wonsan on the east coast of Korea. X Corps would then drive west to connect with Eighth Army, which would advance north from the 38th parallel, again trapping the retreating North Korean forces. Events diverged from this plan, due to the speed of the North Korean retreat and delays in landing at Wonsan.

An aerial view of the invasion fleet at Inchon in Flying Fish channel, September 15, 1950. (Imperial War Museum)

The amphibious and transport ships for the Wonsan landing sailed from Inchon and Pusan in

mid-October joining escorts, carriers, and naval gunfire support ships including the recently arrived battleship *Missouri*. In addition, the landing was supported by four Essex-class carriers in Task Force 77: *Valley Forge*, *Boxer*, *Leyte* (CV-32), and *Philippine Sea*. However, before the amphibious force arrived, the Republic of Korea's I Corps entered Wonsan on October 10 and continued driving up the east coast. That same day, minesweepers began to clear a channel into Wonsan whose harbor had been mined by the North Koreans as a defensive measure (see page 38.). Mines had been discovered along both coasts in September and early October, including some at Inchon. Delays caused by the loss of four minesweepers to mines and the discovery of magnetic mines with delayed detonation fuses forced a postponement of the landing at Wonsan. Finally, on October 26, the 1st and 7th Marine Regiments landed at Wonsan and began preparations to drive north to Hungnam and then northwest towards the Changjin (Chosin) Reservoir. During this period, Task Force 77 provided air cover and interdiction sorties for the eastern half of North Korea, east of 127 degrees longitude, the area of X Corps' advance. Seapower had provided critical support to repel the invasion of South Korea and counterattack into North Korea.

China's Intervention

During the two weeks between the capture of Wonsan and the 1st Marine Division's landing at Wonsan, the People's Republic of China (PRC) intervened in the Korean War. Headed by Mao Tse-Tung, the year-old PRC viewed the American-led invasion of North Korea as a threat to its security. Chinese Communist officials also viewed the deployment of elements of the Seventh Fleet in the Taiwan Strait after the North Korean invasion by the US as an intervention in domestic Chinese affairs. These Seventh Fleet forces in the Strait were organized into the Taiwan Patrol Force to prevent war from spreading from Korea to the Taiwan Strait. From Peking's perspective, the US naval presence in the Strait prevented the Communists from unifying all of China (including Taiwan) under Communist control and thus denied them the chance to eliminate the Nationalists. Beginning on October 19, 1950, the Chinese People's Volunteers, a thin disguise for the regular People's Liberation Army, entered Korea in force. In October and November, the Chinese forces launched major attacks that drove back the UN forces that were scattered across North Korea.

In response to China's intervention, Task Force 77 was tasked in early November with attacking the bridges that ran over the Yalu River, connecting Chinese-held Manchuria with North Korea. Doing so would reduce China's ability to sustain forces in Korea, at least until the Yalu froze. In order to avoid crossing into Chinese airspace, which was off limits, the attacking Navy aircraft had to approach perpendicular to the bridge while being fired upon by antiaircraft batteries on the Chinese side of the river and sometimes engaged by Chinese MiG jet fighters. These bridge strikes involved F9F Panthers flying escort cover, while Corsairs first attacked antiaircraft positions on the Korean side. After

The highway (upper) and railway (lower) bridges at Sinuiju are under attack by aircraft from the *Leyte*, mid-November 1950. The Chinese city of Andong (top right) served as the primary base for Communist MiG fighters. (NARA)

these suppression strikes, AD Skyraiders, carrying 1,000 and 2,000lb bombs, would attack the bridge itself. Most of the bridge strikes produced negligible results, though Navy aircraft did destroy several spans in a bridge at Sinuiju in the west near the Yellow Sea and a bridge at Hyesanjin in eastern North Korea. As the temperature fell, the Yalu River turned to ice, which enabled the Chinese to move troops and supplies south more easily. At the same time, Chinese and North Korean repair crews brought damaged or destroyed bridges back into service. These air strikes illustrated two factors: the difficulty of destroying bridges and Communist repair capabilities that together would limit the effectiveness of interdiction efforts for the rest of the war.

Task Force 77's focus shifted in late November from interdiction attacks on bridges to providing close air support for both Eighth Army in the west and X Corps, primarily 1st Marine Division, in the east. By early December, Eighth Army was in retreat and plans were being made to evacuate large parts of its troops by sea using Task Force 90's transports. One of the first evacuations occurred at the port of Chinnampo, just southwest of the North Korean capital of Pyongyang. Early on December 4, transports began arriving off Chinnampo and heading up the Taedong River to reach the port using a narrow channel recently swept of mines. Reports of enemy forces in nearby Pyongyang that

CHINNAMPO BOMBARDMENT, DECEMBER 5, 1950

The Chinese intervention in the Korean War drove back Eighth Army in the western half of North Korea in late November and early December 1950. As Eighth Army fell back, Naval Forces, Far East sent five transports to the port of Chinnampo to evacuate troops and supplies to the south. Accessing Chinnampo by sea required a passage of about 20 miles through the Daido-ko estuary and up the Taedong River along a narrow and winding channel that had been mined. Although minesweepers had swept a clear route, the river's current might have caused additional mines to drift into the swept channel. Concerns about enemy troops threatening the loading of transports at Chinnampo and calls for immediate support led Canadian Capt. Jeffrey Brock to take his six destroyers up the channel on the night of December 4–5, 1950.

Four destroyers reached Chinnampo and after the evacuation was completed, three of them bombarded the port just after sunset on December 5, 1950. The Canadian *Cayuga* and Australian *Bataan* focused on the oil storage sites, port facilities, and supply caches while the American *Forrest Royal* fired on other targets such as marshaling yards. After a little over an hour of bombardment, Chinnampo was in flames. Capt. Brock reported that "as darkness fell, the fires became more and more brilliant, making the whole waterfront as bright as day; great balls of fire rose from the explosions to dissolve into the huge pall of black smoke which was drifting slowly to the southeast."

Target area: port industrial facilities, fuel depots, railroad stock, and marshaling yards
LSTs
Destroyer force
Shipping channel

could interrupt the evacuation brought in six Task Force 95 destroyers under Captain Jeffrey Brock, Royal Canadian Navy. Brock's destroyers could provide naval gunfire support, but first they needed to reach Chinnampo, which would require a nighttime passage to reach the port as soon as possible. The force consisted of three Canadian (*Athabaskan*, *Sioux*, and *Cayuga*), one American (*Forrest Royal* (DD-872)), and two Australian (*Warramunga* and *Bataan*) ships, highlighting the multinational composition of the UN naval forces in the Korean War. After a harrowing night passage up a winding, shallow channel, four of the destroyers reached Chinnampo on December 5 (*Sioux* and *Warramunga* had to turn back after running aground). Brock's four destroyers covered the evacuation of 7,700 troops and government personnel, 3,000 refugees, and equipment including that of several Air Force squadrons returning to South Korea. After the transports headed out on the afternoon of the 5th, the destroyers bombarded the port area to destroy the large stocks of supplies that were not evacuated as well as port and industrial facilities.

While Chinnampo was being evacuated, the Seventh Fleet on the east coast was providing close air support to X Corps, especially the 1st Marine Division. On November 27, a series of Chinese attacks by the Chinese People's Volunteers' 9th Army Group surrounded the 1st Marine Division in the vicinity of the Changjin (Chosin) Reservoir. The Marines faced a Chinese force more than three times their size as well as the challenges of sub-freezing temperatures and a narrow supply route that ran south back to Hungnam. On November 28, Marine Corsairs flew close air support against the Chinese off the escort carrier *Badoeng Strait*, which had been on station since November 25. These carrier-based Corsairs were joined by other Marine land-based squadrons. Persistent Chinese attacks led to calls for more air support, so on November 30, Task Force 77's aircraft joined the Changjin (Chosin) close air support campaign.

The Marines' goal was to concentrate their units at Hagaru at the southern end of the reservoir and then to retreat along the 78-mile road that connected the reservoir with the port of Hungnam. Navy and Marine aircraft operating from Seventh Fleet carriers provided hundreds of sorties of close air support for this retreat. Chinese tactics relied heavily on placing roadblocks behind US units that were intended to cut off the units' sources of supply and lines of retreat. Close air support repeatedly helped Marine units break through these roadblocks as they concentrated at Hagaru. Navy and Marine aircraft also ranged across the battlefield, striking Chinese troop concentrations on the flanks and reducing the Chinese ability to move. In response to these heavy air attacks, Chinese units began taking cover during the day and conducting movements at night. Corsairs and Skyraiders provided the bulk of these close air support sorties, and in particular the Skyraiders' large payloads and long loiter times proved valuable.

One notable sortie occurred on December 4, 1950 when a flight of six Corsairs from VF-32 took off from the *Leyte* including Ensign Jesse Brown, the

first African-American naval aviator to serve in combat. In the mid-afternoon, while searching for Chinese forces west of the Changjin (Chosin) Reservoir, Brown's Corsair was hit by small-arms fire, forcing him to crash-land behind Chinese lines and seriously injuring him. Brown's wingman, Lt (Junior Grade) Thomas Hudner, purposely crash-landed near Brown and tried to free him from the Corsair, though without success, even with the help of personnel from a rescue helicopter. Due to the onset of night, the helicopter eventually took off with Hudner, leaving Brown who died of his injuries. For their actions that day, Brown received the Distinguished Flying Cross and Hudner the Medal of Honor.

Ensign Jesse L. Brown was the first African-American to complete US Navy flight training and the first to serve in combat. Brown is shown here in the cockpit of a Corsair, the aircraft type he flew on his final mission on December 4, 1950 over the Changjin (Chosin) Reservoir. (NARA)

Close air support for the 1st Marine Division was provided using the Navy-Marine close air support system, which relied on Tactical Air Control Parties (TACP) embedded with each Marine battalion. Each TACP included two Marine aviators and communications personnel to make requests and guide responding aircraft. These TACPs would send requests for air support to the 1st Marine Division's Tactical Air Control Squadron, which directed close air support aircraft to report to the appropriate TACP. The TACP then directed the aircraft onto the target, often within minutes of receiving the request. This system of close air support relied on having enough TACPs so that the TACPs could be embedded with battalions at the front line. As a result, the TACP could provide the detailed target information needed by the aircraft, because the TACP was sufficiently close to the front line to have this information as well as the positions of friendly troops. In December 1950, X Corps' three divisions had 37 TACPs between them, while, in contrast, Eighth Army's five divisions only had 20 TACPs. This concentration was possible because the Marines provided their own TACPs, while Army units relied on the Air Force to provide TACPs and the latter was struggling with personnel shortages. The presence of these TACPs played a significant role in ensuring Seventh Fleet and Marine aircraft provided effective close air support.

The scale of Seventh Fleet's air support effort for the 1st Marine Division increased on December 5 when the carrier *Princeton* joined Task Force 77. By then, Navy and Marine aircraft were providing over 200 sorties a day in support of the division, and at any given time 24 close air support aircraft covered the Marines. The day after *Princeton* arrived, the Marines attacked southeast out of Hagaru to break through the Chinese forces arrayed along the road south to Hungnam and the coast. The Tactical Air Control Squadron, which served as the nerve center for Marine close air support, entered the convoy heading south, which made controlling air missions more challenging. The solution was to

convert a Marine R5D, the Navy version of the Douglas C-54 Skymaster, into an airborne control center by putting controllers, communications personnel, and radios on board. From December 6 to 11, daylight Navy and Marine close air support missions were controlled by this airborne control center, though poor weather on the 8th limited flying operations. During this period the light carrier *Sicily* joined the close air support effort, and on December 9 a record 479 sorties were flown by Navy and Marine aircraft in support of X Corps. This umbrella of air cover helped the 1st Marine Division reach Hungnam on December 11 despite repeated Chinese attacks. By the end of the battle, the Chinese 9th Army Group had suffered just over 30 percent casualties due to combat, air attacks, and cold weather, rendering the formation combat ineffective for three months.

While the Seventh Fleet was supporting the Marine withdrawal to the coast, Gen. MacArthur decided to withdraw X Corps from northeast Korea and redeploy it to South Korea to support Eighth Army. This decision led to a series of evacuations from ports along the northeast coast, culminating with the evacuation of Hungnam. On December 3, Task Force 90 began evacuating UN forces out of Wonsan, south of Hungnam, and finished this work on December 10, bringing out 3,800 troops and 7,000 refugees. The Republic of Korea Army's 1st Corps was evacuated out of Songjin in the far northeast between December 5 and 9 covered by Seventh Fleet destroyers. The next day, December 10, embarkation began at Hungnam for the remainder of X Corps.

The Hungnam evacuation was the largest of the Korean War and was conducted by Adm. Doyle's Task Force 90, covered by aircraft and fire support from Task Force 77 and Task Force 95. Hungnam had port facilities that merchant ships could access and beaches that could be used by amphibious shipping. The evacuation took place in stages beginning with the 1st Marine Division, followed by the ROK 1st Corps, then the 7th Infantry Division, and finally the 3rd Infantry Division. X Corps headquarters coordinated fire support that included Army artillery, sorties from Task Force 77 and Marine squadrons, and gunfire from the cruisers *Saint Paul* and *Rochester* and six destroyers.

Beaches able to support amphibious ships such as Landing Ship Tanks (LSTs) at Hungnam allowed vehicles to drive directly from the shore onto evacuation ships. This view shows two Japanese-crewed LSTs and a US Navy LSM, December 18, 1950. (NARA)

The goal was to remove everything of value, not just personnel, including 9,000 tons of ammunition. As the ground force's perimeter shrank, Task Force 77 air cover and interdiction sorties struck Chinese forces. The Chinese and North Koreans did not make major attacks against the evacuation, due to their need to rest and

refit after the battle of the Chosin Reservoir. Marine air squadrons gradually left the perimeter, flying first to escort carriers off the coast and then further south. On December 15, warships in the Hungnam harbor began to lay down protective naval gunfire as the perimeter shrank, and this effort continued until the evacuation was completed on December 24. Logistics ships resupplied the bombarding warships in Hungnam harbor, which avoided a trip to sea or back to Sasebo, thus maximizing their time on station. Altogether the fleet fired over 18,000 rounds of 5in and almost 3,000 rounds of 8in ammunition during the Hungnam evacuation. On December 23, the battleship *Missouri* arrived to contribute to the final days of protective fire with nine 16in guns. On the 24th, the final troops were withdrawn and the remaining supplies and the town's port were demolished by explosives. The Navy's amphibious ships, Allied occupation of Japan ships, and chartered Japanese merchant ships brought 105,000 military personnel, 91,000 refugees, and 350,000 tons of cargo out of Hungnam. After inserting X Corps into northeast Korea and supporting it after China's intervention, Naval Forces, Far East enabled the Corps' retreat and evacuation out of the north.

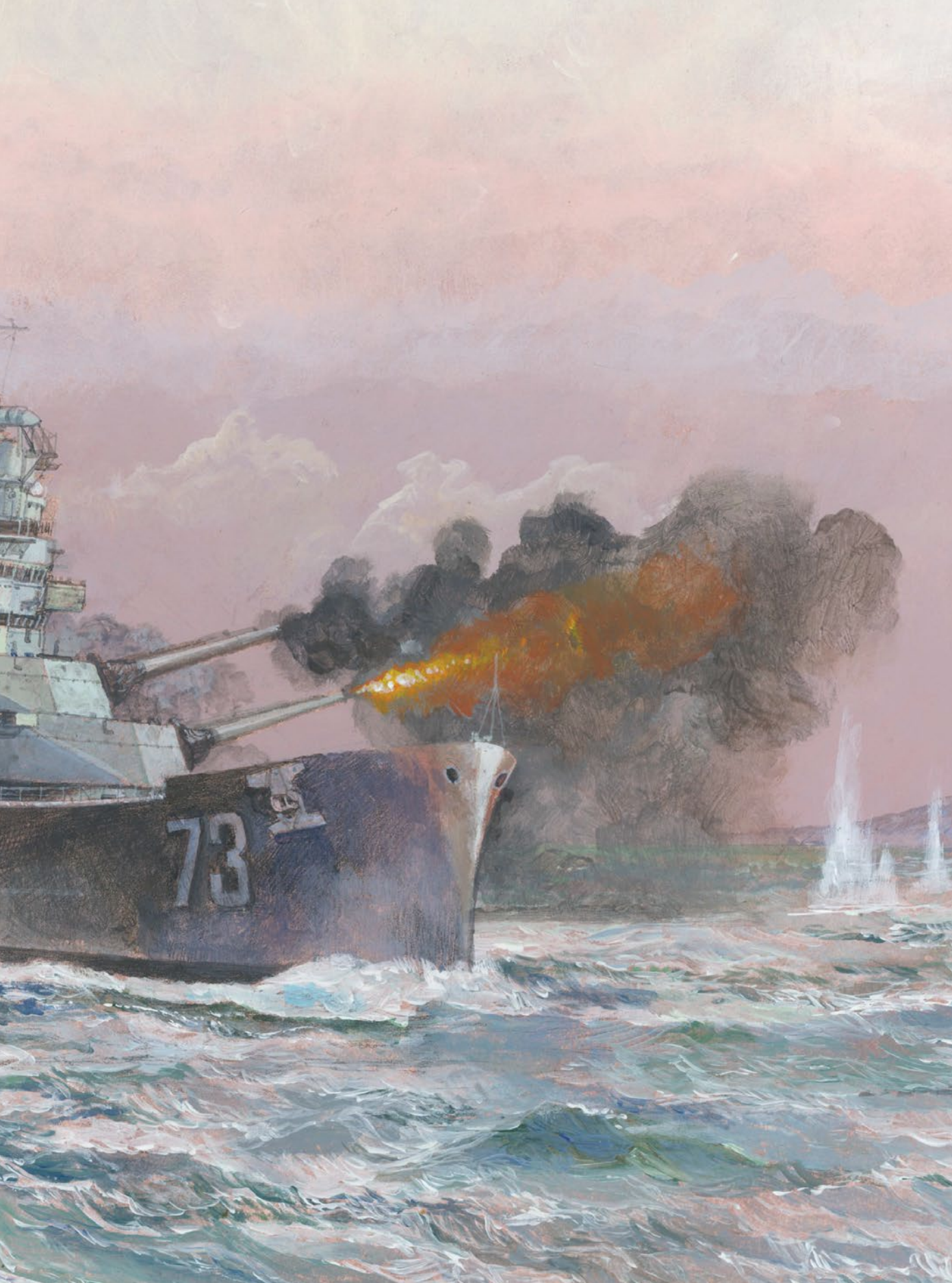
On December 24, 1950 explosives destroyed the port facilities of Hungnam after the final troops were evacuated. The transport *Begor*, a converted destroyer escort, is in the foreground. (NARA)

As X Corps was offloaded in South Korea, the Chinese launched a further offensive against Eighth Army whose lines ran near the 38th parallel. This offensive drove Eighth Army further south and Seoul fell to the Chinese in early January 1951. Throughout January, Task Force 77 provided air support for the

THE SIEGE OF WONSAN (overleaf)

The siege of Wonsan began in February 1951 in an effort by Naval Forces, Far East to interdict Communist supply routes and to draw Communist attention to the eastern coast. A force of destroyers and auxiliary craft maintained a day-to-day presence at Wonsan, but larger warships regularly joined in the bombardment. The heavy cruiser *Saint Paul* is shown here firing on targets at Wonsan. North Korean gun emplacements in and around Wonsan regularly engaged the US ships offshore, which led to extended gunnery duels. The siege continued from February 1951 through the armistice in July 1953. During that period, the number of enemy gun batteries at Wonsan grew, despite regular air and naval gunfire strikes.

Naval gunfire by the *Saint Paul* and other ships was most effective when direct spotting support was provided, whether by spotters on the ground or in aircraft. Helicopters proved to be excellent spotters, though they were more susceptible to ground fire than faster Corsairs or Panthers. Indirect or harassing fire was not spotted and was seen as less effective due to the lack of direct observation. By 1952, UN naval commanders actively worked to reduce the scale of indirect, harassing fire, given the financial costs of high ammunition expenditure.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ground campaign while still supporting the Far East Air Force's interdiction campaign against Communist supply routes. Task Force 95 followed suit with air strikes and naval gunfire along the coasts. Combined with Air Force and Marine air operations, the Navy's interdiction and close air support sorties significantly reduced the availability of supplies to Chinese forces during their offensives in early 1951.

Despite evacuating from Wonsan in early December 1950, the Seventh Fleet returned to the east coast port in mid-February 1951 to launch the siege of Wonsan, which would last until the end of the war. This campaign was intended to restrict Communist use of the east coast transportation network and tie down Communist forces defending against a possible amphibious landing, thus providing some relief for Eighth Army. Wonsan served as a key link in the North Korean transportation system with important rail and road connections running north, south, and west. Wonsan was also an important industrial site with a developed, ice-free port. Beginning in mid-February, Republic of Korea Marines launched a series of amphibious assaults on the principal islands in Wonsan harbor, including Sindo and Yeodo. In March, minesweepers cleared lanes into Wonsan harbor to enable bombarding ships to close with the town and its rail and road network.

The siege of Wonsan typically involved two or three destroyers to bombard Communist positions, four to five minesweepers to keep the harbor free of mines, along with a few small auxiliary craft, although a battleship or cruiser visited periodically to lend additional fire support. The scale of naval gunfire at times was very high, even greater than the evacuation of Hungnam in December 1950, as shown in the table below. The high ammunition expenditure after February 1951 was largely due to the siege of Wonsan. Over time, the North Koreans installed numerous camouflaged artillery pieces in the hills around Wonsan, especially on the Hodo Pando peninsula. This artillery often engaged in running gun battles with the destroyers in Wonsan harbor and periodically caused damage to these ships. Aircraft from Seventh Fleet carriers regularly spotted for the bombarding ships at Wonsan and struck artillery positions when they were visible. Naval gunfire and air strikes were used cooperatively to interdict the transportation routes leading to and from Wonsan. The US would later construct an airfield on Yeodo island for damaged aircraft to make emergency recoveries and would use the islands in the harbor as launching pads for intelligence-gathering operations and raids.

US NAVAL FORCES, FAR EAST AMMUNITION EXPENDITURE IN ROUNDS, JULY 1950-APRIL 1951

Weapon	Date									
	July–Aug 1950	Sept 50	Oct 50	Nov 50	Dec 50	Jan 51	Feb 51	Mar 51	April 51	**Total**
16in.	0	404	256	0	162	0	997	994	0	**2813**
8in.	7261	4402	744	1566	3357	651	2395	1577	3808	**25761**
5in.	31140	8648	3114	3791	15357	3468	13385	43360	39042	**161305**

The Interdiction Campaign (1951–1952)

While the siege of Wonsan focused on a specific location, Task Force 77's efforts to interdict Communist transportation and logistical capabilities extended throughout eastern North Korea. In mid-February 1951, the Far East Air Force asked V. Adm. Joy if the fleet carriers could take over interdiction of the eastern transportation routes in North Korea. Doing so would allow Air Force bombers to focus on the western routes, which had more capacity than the eastern routes, due to the more mountainous terrain in the east. The carriers began attacks on eastern North Korean railroads in late February, focusing on 48 bridges in locations where building a bypass to a damaged or destroyed bridge would be difficult. Destroying these bridges would also create backlogs of supplies and lead to concentrations of trucks seeking to keep the supplies moving, both of which could be attacked from the air.

Implementing this approach proved to be difficult in practice, as demonstrated by the example of a 650ft rail bridge over a gap in the hills southwest of Kilchu. Between March 2 and April 2, six airstrikes consisting of Corsairs and Skyraiders destroyed several pieces of the bridge and attacked repair work performed by the Communists after the initial attack. Air Force B-29s also struck the repair work with delayed action bombs. However, the Communists used trucks to move material around the damage and worked rapidly to conduct repairs and build several bypasses. In April, these smaller bypass bridges were completed, each of which were easier to repair than the original bridge. Task Force 77 attacks on bridges south of Songjin had a similar outcome. The Communists initially worked to repair the original bridges before constructing bypasses.

The interdiction effort faced several challenges. First, the North Koreans and Chinese devoted thousands of laborers to repairing their supply lines, and as the war went on, their logistical organization became larger and more sophisticated. Second, the carriers only had a small number of aircraft trained and equipped for night operations, which led the Communists to conduct most of their logistical movements at night, thus avoiding daylight sorties. Third, the reinforced concrete of railroad bridges could only be destroyed with the heavy firepower of a Skyraider, a battleship, or a heavy cruiser which meant that only a certain number of reinforced bridges could be attacked each day.

Due to these factors, the UN air forces were unable to completely shut off the flow of supplies to Chinese and North Korean forces, despite several shifts in interdiction tactics. However, the interdiction campaign did

An AD Skyraider from the *Bonhomme Richard* attacks targets in North Korea in 1952. (National Naval Aviation Museum)

reduce the amount of supplies reaching front-line Communist units. In late April 1951, the head of logistics for the Chinese People's Volunteers reported that 30 to 40 percent of the supplies sent to the front never reached the front due to air attacks. The attacks also forced the Chinese and North Koreans to devote personnel and equipment to maintaining transportation routes and to deploying antiaircraft guns to protect them.

In an effort to improve the coordination of naval efforts in the interdiction campaign, in April 1951 V. Adm. Joy shifted Task Force 95 from reporting directly to Naval Forces, Far East to reporting to Seventh Fleet. This change in the command structure put the two primary task forces engaged in interdiction (Task Force 77's fleet carriers and Task Force 95's light carriers and bombardment ships) under a single commander.

This new structure was tested in late April and May 1951 when the Chinese launched two offensives against UN ground forces. In response, the Seventh Fleet's focus shifted from interdiction to close air support during these offensives. To increase the scale of air support provided, on April 24, 1951 Task Force 77 shifted from replenishing every couple days to daily replenishment. This daily replenishment effort began in the late afternoon and went on well into the night. The resulting high sortie rates from Navy carriers highlighted ongoing problems with the Army-Air Force close air support system. Once again, Air Force airborne controllers were swamped by the numbers of Navy close air support aircraft arriving simultaneously and naval aviators complained of poor employment of their ordnance by Air Force controllers. In late May, UN ground forces began a counteroffensive that in June advanced the front line north of the 38th parallel, where it would remain largely static for the remainder of the war.

The battles of April, May, and June 1951 increased the Communist demand for supplies and equipment as these were consumed in combat. However, UN pressure forced a change in Communist logistics. Due to the April and May interdiction efforts of the Seventh Fleet and the Far East Air Force against rail

F4U Corsairs and AD Skyraiders from *Boxer* fly just off the North Korean coast, August 15, 1951. Interdiction strikes in North Korea typically used Corsairs to suppress air defenses while Skyraiders attacked the target. (NARA)

lines, the Communists began to shift some of their shipments from rail to trucks. In response to this change, the Far East Air Force launched Operation *Strangle* in late May 1951 in coordination with Task Force 77 and the 1st Marine Air Wing. *Strangle* focused air attacks on the roads that ran from the railheads around the 39th parallel south to the Communist troop concentrations. Task Force 77 was responsible for the two routes (out of seven in total) in the center of the peninsula. These attacks initially had some success, as the combat occurring on the ground due to Eighth Army's operations consumed Communist supplies, which had to be replaced. However, after the ground war became static in June, Eighth Army's pressure faded. As a result, the need for extensive Communist resupply also fell off. Furthermore, destroying a short section of road and keeping that section impassable proved to require two to five times as many sorties as were required to cause breaks in rail lines, since road cuts were easier to repair and easier to circumvent. Intelligence analysis indicated that deliveries of supplies to the front lines remained relatively steady due in part to greater Communist use of alternative roads and movements at night.

The meager results of Operation *Strangle* led to another shift in the interdiction campaign's emphasis in August from roads back to the rail network. The Seventh Fleet focused air and gun strikes on railroads in central North Korea and along the eastern coastal corridor, while the Far East Air Force handled the western side of the peninsula. The focus on interdiction continued in September to such a degree that Far East Command directed Task Force 77 to stop flying close air support missions in order to focus on interdiction. In October, interdiction sorties shifted from prioritizing bridge attacks to making rail cuts. Between June and December 1951 Task Force 77 flew an average of 1,800 interdiction sorties a month. The task force's aircraft routinely made 100 cuts in railroad tracks a day as their skill and experience in such attacks increased. While the focus of the campaign had shifted to rail cuts, attacks on the most important bridge targets continued to keep them out of service.

While the fleet carriers emphasized interdiction, off the Korean west coast Task Force 95 became indirectly involved in the armistice talks in the summer and fall of 1951. On July 10, 1951, armistice negotiations began between representatives of the UN Command, the Chinese People's Volunteers, and North Korea at Kaesong. In late July, V. Adm. Joy, the senior UN representative at the talks, asked that Task Force 95, under R. Adm. George Dyer, demonstrate UN strength as close as possible to Kaesong. Dyer sent several frigates into the estuary of the Han River where their gunfire could be heard at the Kaesong negotiation site. Operating in the confined Han River proved navigationally challenging, especially when the frigates engaged in artillery duels with Communist batteries on shore. Task Force 95's rotating light or escort carriers on the west coast flew regular spotting sorties for the frigates in the Han River.

The continuous deployment of two to three frigates in the estuary proved to be a source of conflict between senior American and British commanders, one

R. Adm. Alan Scott-Moncrieff, Royal Navy, visits with sailors from HMAS *Warramunga* in 1951. Scott-Moncrieff served as the Task Force 95 commander for west coast operations and had served with the US Navy as an advisor and observer in 1941. (Australian War Memorial, 304631)

of the few sources of tension amid generally amicable navy to navy relations. R. Adm. Dyer, the American commander of Task Force 95, valued the naval show of force in the Han River, believing that it influenced the negotiations taking place ashore, especially since the two sides were debating which areas were under their control. In contrast, R. Adm. Alan Scott-Moncrieff, the senior British naval officer in Korean waters and Dyer's subordinate, felt that the risk of serious damage to the British, Australian, American, and New Zealand frigates stationed in the estuary was not worth the indirect impact on the negotiations. This disagreement between Dyer and Scott-Moncrieff was resolved when Dyer ended the deployment on November 30, 1951, due to developments in the negotiations.

While the end of the Han River demonstration removed one area of tension, strained relations between Scott-Moncrieff and his staff and Dyer continued. Dyer preferred to exercise command of Task Force 95, which had responsibilities on both Korean coasts, from at sea and frequently visited the west coast. This approach was a departure from the pattern established by previous commanders of Task Force 95, who had mostly stayed ashore and given the British admiral on the west coast considerable autonomy. Scott-Moncrieff found that Dyer's presence on the west coast led to "a great deal of backseat driving" and expressed his frustration openly at times. When informed that Dyer planned to sail to the west coast, Scott-Moncrieff messaged, "I hope he [Dyer] will cause no trouble," knowing that this message would be visible to junior officers. Ultimately Scott-Moncrieff's tension with Dyer ended in May 1952 when Dyer's tour as Commander, Task Force 95 ended. Dyer's tenure with Task Force 95 illustrated the role that diverging perceptions and command styles could have on coalition naval operations. Ultimately, the strained relations during Dyer's command proved to be the exception rather than the rule.

Throughout the fall of 1951 while the Han River demonstration took place, the fleet's interdiction campaign struggled against an ever-growing Communist repair capability that could repair or bypass rail bridges in days and highway bridges in hours. While repeated attacks against specific targets could disrupt repair efforts, such attacks allowed the Chinese and North Koreans to concentrate antiaircraft defenses near these repeat targets. Furthermore, such repeated attacks on priority targets necessarily left other targets alone. Increasingly heavy antiaircraft concentrations in North Korea led to steady damage and loss of aircraft. Between May and December 1951, Task Force 77 lost 74 aircraft on interdiction missions due to enemy action. Such losses were mitigated by the presence of friendly forces at Wonsan, which provided a relatively secure site for recovering aircrew. Despite the intensive air effort, Communist forces continued to receive significant quantities of supplies. For example, Eighth Army received just over 8,000 rounds of enemy artillery fire in July 1951 and over 43,000 rounds in November.

In early 1952, the Seventh Fleet shifted its interdiction campaign once again. Instead of emphasizing rail cuts across a wide geographic area, air strikes and naval gunfire would focus on making a select number of extended rail cuts, typically 1,500 to 4,000yds long. These extended cuts would be maintained through repeated attacks intended to prevent repair work. Although initially successful, the focus on specific areas again allowed the Communists to concentrate their air defenses in these locations, increasing aircraft losses. As a result, more aircraft had to be devoted to suppress these air defenses, which meant fewer aircraft performing the actual interdiction attacks. Furthermore, the Chinese and North Koreans proved adept at moving supplies around the cuts by using alternative routes. A Pacific Fleet report concluded that "the enemy was able to move enough supplies by night to meet his needs and to stockpile vast quantities behind the front lines." A senior intelligence officer in the Far East Air Force summarized the interdiction effort by commenting: "We are somewhat in the position of trying to starve a beggar by raiding his pantry when we know he gets his meals from his rich relatives up the street." Interdiction proved most effective when paired with UN ground attacks, which were rare after the summer of 1951. In the absence of ground pressure, interdiction failed to meet the intent of planners who sought to cut Communist supply lines.

The Air Pressure Campaign (1952–1953)

Due to the meager results of the interdiction campaign and the lengthening armistice negotiations, the Seventh Fleet increasingly turned its focus to a concerted air pressure campaign beginning in June 1952. The campaign was intended to destroy targets of value to North Korea and China in order to pressure these nations into making concessions at the negotiating table, and thus bring the war to an end. While such targets had been struck earlier in the war, in the summer of 1952 the scale of attacks increased dramatically and previously off-limits targets were struck. A series of raids on hydro-electric power plants in June 1952 illustrated this effort.

On June 23, four carriers from Task Force 77 launched 290 aircraft to join with Air Force aircraft to attack hydro-electric power plants, especially the major plant at Suiho, located along the Yalu River in western North Korea. The strike was noticeable for its effective cooperation between the Air Force and Navy. This attack was followed by a series of raids in late June that dramatically reduced North Korea's power generation capabilities, though repair efforts restored much of the damage by late August.

R. Adm. Joseph "Jocko" Clark as a carrier division commander on the *Philippine Sea*, February 1949. Clark inaugurated Cherokee strikes in Korea against supply concentrations in September 1952. The name Cherokee was a reference to Clark's Cherokee heritage. Clark was the first Native American to graduate from the US Naval Academy at Annapolis. (NARA)

The power plant strikes were followed by three more major interservice air operations in the summer of 1952. On July 11, the Seventh Fleet, Far East Air Force, and the Marine Corps launched 822 planes against the North Korean capital of Pyongyang. These aircraft destroyed a number of supply and industrial targets. The second major strike involved Navy, Marine, and Air Force air attacks on a significant supply center on the west coast on August 20. In the third operation on August 29, over 1,000 UN aircraft returned to Pyongyang, destroying transportation and industrial targets. The emphasis on industrial targets continued on September 1 when Navy aircraft hit Aoiji, a synthetic oil production center in far northeast North Korea.

By the fall of 1952, UN aircraft had struck the majority of the industrial targets in North Korea. Furthermore, the interdiction campaign, which had been sustained at a lower level during the focus on air pressure targets, continued to produce meager results. In response, V. Adm. Joseph "Jocko" Clark, Commander, Seventh Fleet, shifted the focus of Task Force 77 air attacks to what became known as Cherokee strikes. These multi-squadron air attacks of 24 to 28 aircraft, on average, attacked supply concentrations identified by intelligence located behind the Chinese and North Korea front lines. The targets were selected through consultation with Eighth Army's corps headquarters and benefited from extensive preparation. Cherokee strikes began in October 1952 and quickly became the top priority of Task Force 77. Close air support missions nearer the front line were the carriers' second priority during this period.

Assessing the results of the Cherokee strikes proved difficult, due to the effectiveness of Chinese and North Korea camouflage and dispersion. The attacks proved popular with Eighth Army commanders who, in the words of one report, viewed the attacks as "free artillery." The attacks continued through the end of the war. However, despite the Cherokee strikes and the interdiction campaign, by early 1953 the Chinese and North Korean forces had grown in size and their supply levels were sufficient to support sustained offensives later in 1953.

Despite the praise from Eighth Army for the Cherokee strikes, the repetitive nature of the Seventh Fleet's operations as 1952 turned to 1953 had a negative impact on morale. One report noted "a growing sense of the apparent futility of TF 77 air operations as a conclusive factor in the Korean War has spread thorough all ranks, causing widespread indifference toward vigorous prosecution of the war." Naval gunfire support continued on both coasts and in particular proved useful for the Republic of Korea Army's I Corps, stationed on the east coast. However, ships providing naval gunfire support generally had a lower view of the utility of their fire than did Eighth Army commanders. The siege of Wonsan also continued as Communist artillery around Wonsan regularly engaged the destroyers standing watch in the harbor. The city itself was "a charred and broken expanse of ruins." Similar to the air campaign, the static nature of operations in Wonsan led to "increasing doubts amongst destroyers

By the end of the Korean War the city of Wonsan reflected the sustained air and naval bombardment received from the siege of Wonsan, which began in February 1951 and continued through July 1953. (NARA)

… as to the worthwhileness of the siege." Seapower provided significant advantages for the UN Command, including secure supply lines, long-range offensive capabilities, reconnaissance, and the threat of amphibious landings. However, the Fleet struggled to translate these advantages into progress at the negotiation table.

The death of Soviet Premier Joseph Stalin on March 5, 1953 led to significant changes in Chinese willingness to come to an agreement. As the two sides neared an armistice in June 1953, Chinese and North Korean offensives along the front line intensified to gain territory before an armistice finalized the demarcation line and in response to a South Korean prisoner-of-war release. Accordingly, Seventh Fleet prioritized close air support missions in June and July in the final weeks leading up to the armistice. Task Force 77 increasingly replenished at night to maximize the carriers' ability to conduct daylight air operations. The carrier *Princeton* established a record for Essex-class carriers when, on June 15, 184 sorties were flown. During the last two months of the war Task Force 77 flew an average of 2,000 close air support and Cherokee sorties per month, expending over 4,000 tons of ordnance each month, a clear indication of the Fleet's focus on supporting the ground campaign. Once again, Air Force airborne controllers proved unable to control all of the close air support flights committed and had difficulty identifying targets when battlefield positions were rapidly changing. While the close air support system used by the Air Force and the Seventh Fleet in July 1953 was considerably more capable than in July 1950, issues remained.

ANALYSIS

The signing of the armistice on July 27, 1953 ended three years of warfare on the Korean peninsula, leaving it divided into two rival states. The Seventh Fleet played an important role supporting UN ground operations, which were the principal focus of combat during the Korean War. The Fleet's control of the waters around Korea allowed for the rapid movement of ground forces from Japan and the United States to South Korea in the initial weeks after the invasion. Similarly, the Fleet's air and naval gunfire helped disrupt North Korean attacks on Eighth Army's defenses around Pusan. In particular, Marine operations along the southern coast and Republic of Korea Army operations on the east coast benefited from the Fleet's support during this crucial period. The Fleet's invasion of Inchon put major UN ground forces in a position to cut North Korea's supply lines and destroy the bulk of the North Korean Army in September and October 1950. The Inchon landing was a critical element in the removal of North Korean forces from South Korea. After China intervened, the Seventh Fleet provided critical air support to X Corps, especially the 1st Marine Division, during its withdrawal. The Fleet then evacuated X Corps from the east coast by sea, returning it to the fight, which helped Eighth Army defeat Chinese offensives in the spring of 1951. Naval aviation provided effective close air support during these Chinese offensives in 1951 and the subsequent counteroffensive by Eighth Army which inflicted significant damage on the Chinese People's Volunteers. The Fleet's control of the seas around Korea secured Eighth Army's flanks throughout this period, allowing ground forces to focus on the land campaign.

Once the front line stabilized, the Seventh Fleet continued to contribute to the overall UN war effort, though its contributions were less noticeable than in the war's first year. The interdiction campaign reduced the arrival of Communist supplies at the front, but never to the degree intended by UN commanders. Similarly, the air pressure campaign suffered from the limitation of focusing on targets in North Korea when the most important decisions about the armistice negotiations were made in Moscow and Beijing. The campaign devastated North Korean industrial capabilities and urban centers, which had lingering effects on the North Korean economy. Operations in the Han River and off Wonsan highlighted the Fleet's capabilities and put pressure on the Communists by tying down their forces and resources, but their impact on the armistice negotiations was limited. Still, the Seventh Fleet's support for ground forces, both direct, and indirect, ultimately helped preserve the independence of South Korea, which developed into a democracy with a strong economy.

The Seventh Fleet's operations in the Korean War also highlighted the continued utility of naval power. The widespread use of jet aircraft illustrated their capabilities and the need for carrier aviation to adjust to the logistical realities of operating air groups dominated by jets. The war demonstrated that aircraft carriers, amphibious operations, and naval gunfire remained effective tools in the face of arguments from some commentators that the introduction of nuclear weapons had made naval power largely irrelevant.

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OSPREY PUBLISHING
Bloomsbury Publishing Plc
Kemp House, Chawley Park, Cumnor Hill, Oxford OX2 9PH, UK
Bloomsbury Publishing Ireland Limited,
29 Earlsfort Terrace, Dublin 2, D02 AY28, Ireland
1385 Broadway, 5th Floor, New York, NY 10018, USA
E-mail: info@ospreypublishing.com
www.ospreypublishing.com

OSPREY is a trademark of Osprey Publishing Ltd

First published in Great Britain in 2025
This electronic edition published in 2025 by Bloomsbury Publishing Plc

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A catalog record for this book is available from the British Library.

ISBN: PB 9781472866868; eBook: 9781472866875; ePDF: 9781472866844; XML: 9781472866851

Maps/2D diagrams by www.bounford.com
3D diagrams by Adam Tooby
Battlescenes by Paul Wright
Index by Richard Munro
Typeset by PDQ Digital Media Solutions, Bungay, UK

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